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Canada. Royal commission on the  
Great Slave Lake Railway.

Hearings. V. 10-11, 1959.

1960











**ROYAL COMMISSION**  
**ON**  
**GREAT SLAVE LAKE RAILWAY**

**HEARINGS**

HELD AT  
EDMONTON, ALBERTA

VOLUME No.: *10*

DATE:

*SEPT. 29/59*

OFFICIAL REPORTERS  
ANGUS, STONEHOUSE & CO. LTD.

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ROYAL COMMISSION ON  
THE GREAT SLAVE LAKE RAILWAY

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Hearings of the Royal Commission on  
the Great Slave Lake Railway held  
at the Court House, Edmonton, Alberta,  
at 10.00 a.m., September 29, 1959

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PRESENT:

MR. M. E. MANNING	Chairman
MR. WALTER D. GAINER	Member
MR. JOHN ANDERSON-THOMPSON	Member

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MR. FRANCIS M. FEEHAN	Counsel
MR. A. PATERSON	Secretary

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SUBMISSION OF  
PINE POINT MINES LIMITED

Appearances:

Mr. C. H. B. Frere

General Solicitor

Mr. W. G. Jewitt

President, Pine Point  
Mines Limited.

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THE CHAIRMAN: Mr. Frere, are you going to present the brief on behalf of the Pine Point Company?

MR. FRERE: Yes, Mr. Chairman. I am not actually presenting the brief, but Mr. Jewitt, the president of the company, is here, and he will make the submissions. I will call on Mr. Jewitt.

MR. JEWITT: Mr. Chairman, may I proceed now?

THE CHAIRMAN: Yes. Your brief is not long, Mr Jewitt, and if you would like to elaborate on it as you go along then, of course, we would be very glad to hear any comments you have in addition to what is written.

MR. JEWITT: Thank you. I would like to make a few introductory remarks, and then later I would be glad to answer any questions that may be put to me.

Our brief, as you know, is much shorter than others you have heard. This is not because we think







so important a subject can be dismissed in a few words, but because we think the project we are dealing with - - that is, a development railroad to Great Slave Lake - - is not one that can be evaluated in precise terms, but only by a general appraisal of what is likely to be developed in Northern Canada. Consequently, we have not tried, except in the one instance, to make any estimate of freight tonnages likely to be generated by new mining enterprises, but have merely pointed out the general situation. The proof of the potential value of the proposed railroad, and of the relative value of the two routes, lies in Canadian experience elsewhere in the Pre-Cambrian area.

The one exception I refer to is, of course, the Pine Point ore bodies, in regard to which we have estimated actual tonnages.

Now, to go ahead with the brief, Pine Point Mines Limited is a corporation that was incorporated under the Companies Act of Canada on 16th May, 1951. I am president of that company.

The company holds 1018 mineral claims near the southerly shore of Great Slave Lake in the Northwest Territories. This mining property contains a number of lead-zinc ore bodies

The company has entered into an agreement with the Consolidated Mining and Smelting Company of Canada Limited (hereinafter called "Cominco"), whereby Cominco has been appointed the agent of the company







for the purpose of carrying out the development and mining of the property.

If a railroad were built to Great Slave Lake, and the freight rate were normal and reasonable, the company would plan to put its property into production at the rate of about 215,000 tons of concentrates per year.

I might just explain there, Mr. Chairman, that we are talking in terms of the concentrates because our work has shown a great variation in grade from ore body to ore body. Our actual rate of mining might be anywhere from 2,500 tons a day on high grade ore to, possibly, twice that amount on lower grade ore, so the output of concentrates would be approximately the same, namely, 215,000 tons of concentrates per year.

The company does not consider that the construction of a smelter at the mine would be economically justified. Consequently, the company has in mind that it would ship its concentrates to the smelter of Cominco at Trail, British Columbia.

The rate at which the property may be mined depends entirely on economics, including the state of the markets for lead and zinc and unforeseeable events, such as war or a major world depression, any of which might seriously affect the rate at which the property may be mined.

It is not possible to make a precise estimate of the number of years during which the pro-





perty may be mined. Based on geological considerations, certain widely spaced diamond drill intersections and general similarities to other major lead-zinc fields, it is probable that mining could be continued at a rate which would produce 215,000 tons of concentrates per year for at least 25 years, possibly much longer.

The number of employees required for the operation presently contemplated would be approximately 225. This would ultimately create a community having a population of approximately 1,000.

A low cost of transportation is essential to the development of the north, because of the remoteness of the area from supplies and from the ultimate markets for the products developed. This is true particularly in respect of an operation such as that proposed by the Company, where the product to be shipped is bulky and heavy.

I might interpose there, Mr. Chairman, that although the matter of freight costs is important to every mining operation it is not so important if the product is something valuable and not bulky, such as gold. As you know, we have operated gold mines in the north, and the mining industry has had gold mines in the north, for many years. And while we find the transportation costs are a serious item of cost, still because our product can be flown out the transportation cost is not as serious as it is with a base metal







operation where your product must be carried many miles to its market, and the product itself is much less in value per unit of weight.

Base metal mines, generally speaking, will give more employment, and you might say they will make for a more stable economy than do the gold mines, but in some cases they tend to have a shorter life. It is harder to generalize because there are mines like the Hollinger that have been going for 30 or 40 years. But, generally speaking, the base metal industry would tend for more employment and more stable economy.

THE CHAIRMAN: Gold can be shipped out easily from the north, and so can uranium?

MR. JEWITT: Yes, you can fly it out.

THE CHAIRMAN: Is the uranium substance which is sent out as valuable as gold?

MR. JEWITT: I think it occupies an intermediate position. It is much more valuable than lead or zinc, but it is not so valuable as gold.

The distance of the Waterways route from the mine to Trail is approximately 1,351 miles, which is 54 miles less than the next shortest alternative route, through Grimshaw. Presumably, this 54-mile differential would add appreciably to the cost of shipping the concentrate and of producing the finished metal. Also the Company understands there is and would be considerably more traffic over the Waterways route than over the Grimshaw route, consequently the Waterways







route would be more economic. The Company, therefore, strongly advocates that the Commission recommend the adoption of the route that will give the lowest cost of transportation, which would appear to be the Waterways route.

Furthermore, considering the broad possibilities for mineral development of the vast area of potential mineral-bearing country in the vicinity of Lake Athabasca, and the possibility of development of the bituminous sand area north of Waterways, Alberta, which is likely to become a major producer of petroleum products some time in the future, it is the Company's opinion that the Waterways route to the shore of Great Slave Lake would be much better suited to promote those developments than would alternative routes.

Thank you, sir.

MR. FRERE: Mr. Jewitt, I think it would be of interest to the Commission if you could make some statement of your impression of the general geology of the Pre-Cambrian area, but before doing so I think we should have on the record your qualifications. Would you tell the Commission how long you have had experience in mining, or mining geology, in the north, and just tell the Commission a little bit of your history with the company, Consolidated Mining and Smelting Company.

MR. JEWITT: Well, Mr. Chairman, as I think you know, I graduated from the University of Alberta in mining geology following the first war and after some







geological experience in the Peace River area I finally joined Consolidated Mining and Smelting Company in 1927 and started work in the north country as an exploration engineer, and was there until 1929. Since that time I have been concerned with the development, and I am still concerned with it. For 20 years I have been concerned with it only. That was my assignment with Cominco, and as a result of that, of course, I became very familiar with the Pre-Cambrian district which we are speaking about, and, generally, the area tributary to the Mackenzie waterways system.

THE CHAIRMAN: You lived in Yellowknife for a number of years?

MR. JEWITT: Yes.

THE CHAIRMAN: How long were you there?

MR. JEWITT: I have lived at both Goldfields and Yellowknife.

THE CHAIRMAN: How long were you in Goldfields?

MR. JEWITT: About five years.

THE CHAIRMAN: And in Yellowknife for considerably longer?

MR. JEWITT: No, because after I had been in Yellowknife for two years, I think it was, I received a more generous assignment which necessitated my moving to Trail, but, of course, I was then, and still am, concerned with our exploration and mining in the north country. My present position, just for your informa-







tion, and, perhaps, to justify my appearance before the Commission here, is Vice-president in charge of mining for Consolidated Mining and Smelting.

MR. FRERE: There is one further thing, Mr. Jewitt; I believe you are Dr. Jewitt. Do you have an LL.D degree?

MR. JEWITT: Yes.

MR. FRERE: That degree, I understand, you received in consideration for your work in the development of the north country?

MR. JEWITT: That was the citation, I think.

MR. FRERE: Now, would you just state to the Commission what your opinion is of the general geology of the Pre-Cambrian area.

MR. JEWITT: I did prepare a short supplementary statement, Mr. Chairman, which deals with the general situation. As I said before reading the brief, I do not think we can be specific, but this will generally sketch out the situation.

I would say that the general statement in the last paragraph of our submission is as accurate a statement as can be made regarding the mineral potential of the Waterways route. It might be made stronger by saying there is no comparable potential along the Grimshaw route until it reaches Great Slave Lake where, of course, both routes have the same potential. If additional emphasis is required it would be necessary to explain the statement in terms of general geology - -





that is, the Grimshaw route south of Great Slave affords access only to country underlain by cretaceous rocks which have no mineral potential, while the Waterways route gives direct access to Lake Athabasca, which is a deep water route for 200 miles into country underlain by Pre-Cambrian rocks.







The Waterways route also is close to the Pre-Cambrian contact for about 120 miles north of the west end of Lake Athabasca. The Pre-Cambrian rocks of the Laurentian Shield are the source of the immense mineral production in Northern Quebec, Ontario, Manitoba and in Northeastern Saskatchewan and while the Beaverlodge uranium mines at present are the only producers in that part of the Shield accessible from the Waterways route many mineral occurrences are known and there is every reason to expect -- by analogy -- that important mines will be developed there.

When I say "many mineral occurrences", that means what you call prospects in the mining industry exist throughout the country, and, generally speaking, you can say that where you have prospects you are likely to have mines That is true not only in the Pre-Cambrian, but also in British Columbia where, as a matter of fact, in the Largo country, which has been known and prospected for certainly sixty years, is now showing signs of developing one or two sizeable mines

THE CHAIRMAN: What country is that?

MR. JEWITT: The Largo, north of Kootenay Lake in British Columbia. There is an ore country which has been prospected off and on for sixty years and now, after all that time, is showing signs of developing.







The supporters of the Grimshaw route mention the oil and gas potential, as yet only partly tested, along that route. This, of course, is more than offset by the known occurrence of bituminous sands along the Waterways route, and there is plenty of evidence to show that in the not too distant future those will be developed.

That is all I have to say at the moment, sir.

MR. FRERE: That completes our submission, Mr. Chairman.

THE CHAIRMAN: Would you mind showing us where the area is that you have been referring to? Perhaps you can show us where some of these showings of minerals are on the large map on the wall which is Exhibit 52F

MR. JEWETT: I should say again, Mr. Chairman, that when you ask me to show mineral occurrences, that is what I am speaking of; not mines. With the exception of Beaverlodge, there are no mines in this general area.

THE CHAIRMAN: Yes

MR. JEWITT: There are areas, of course, which are considered of greater potential value than others; at least, from the general geology, but even those classifications are a little dangerous to make.

Taking in directly Lake Athabasca, we all know the Rainy City area and around north of Fond du Lac there are a number of gold prospects.





THE CHAIRMAN: That is east of Uranium City?

MR. JEWITT: Yes. It is in the general area east of Fond du Lac, and that is where the lake narrows down. I am sorry, but this map does not appeal to me as being accurate.

COMMISSIONER THOMPSON: They have got Stoney Rapids and Fond du Lac interchanged.

MR. JEWITT: Yes, that is right. To the north of there, in this general area, possibly you can see by the difference in the general appearance of the lakes that they are twisted around and strung out, and that indicates the general geology of the area -- just the appearance of the lakes. In this area here nickel has been known for a good many years. Quite a few people have been working on it -- we have ourselves -- but so far nobody has been able to show an orebody. I think anybody would be foolish to say there is no orebody, because, after all, the International Nickel Company has got a very important development at Thompson Lake in Northern Manitoba which is only twenty miles from the railroad. So, it shows how it is quite unsafe to say that because nothing has been found nothing will be found. Around Holiday Lake there are occurrences of pyhorrtite which show low value in base metals -- copper, lead and zinc. Coming a little closer in, in the Thelon country, which is







the general drainage area from Lake Eileen right through down in this general direction where it takes a big loop.

THE CHAIRMAN: Could we have that marked with a pencil?

MR. JEWITT: The Thelon? I think you can see the general Thelon drainage area.

THE CHAIRMAN: Well, could you draw that on?

MR. JEWITT: Or, the Talston -- the Thelon and the Talston. The Thelon is over here.

THE CHAIRMAN: Could you outline it in a very general way?

MR. JEWITT: There is the mouth there, and the general area of interest would include right back into here. Within that area there are a number of both large and small areas of the older rocks which characteristically carry the mineral occurrences. The only known occurrences are in the general location of Lady Grey Lake, and north of there where lead, zinc and uranium occurrences are known; not mines, but occurrences. Around Tsu Lake, there is a small area of the Greenstones in which some mineral has been noticed. Around another area further over, around Hill Island Lake which is here -- that is a potential; it is good prospecting ground and that is as much as you can say. There are small known occurrences of mineral. Even in the northeast of







Alberta, which is generally considered to be not very favourable, there are small occurrences which have been known in small areas of these older rocks which are potentially mineral bearing.

I would like to enlarge on a point in this connection, that it is difficult to pass judgment on an area and say that it is not favourable. The best example of that in recent years has been the discovery of the Geco and the Rural mines in the Manitouwadge area of western Ontario, which is some 100 miles west of Sudbury, and lies between the C.P.R. and C.N.R. In other words, in country which has been run over for many years. These mines were discovered in 1954, and now one is producing at about two thousand or three thousand tons a day, and the other one about a thousand tons a day of good grade ore.

Just by chance I happen to have a rather old copy of World Mining with me, and I would like to read a paragraph. This is an article which actually is dealing with the stoping -- the mining method -- and it says:

"Today the mine developed by Geco is a fine example of progressive application of Canadian underground practice. Geco is producing 2.3 per cent zinc ore. Output per underground manshift has grown to 25 tons. . . ." And then it goes on and gives a little boost there,





but the paragraph of importance is:

"Perhaps the most important aspect of this operation, however, is the fact that it is one of two newly developed mines located in a district that had been overlooked for many years. The Manitouwadge area is characterized by relatively small belts of Pre-Cambrian greenstones. Though the greenstones of the Canadian Shield are generally regarded as favourable zones for mineral exploration, those near Manitouwadge did not compare in size with similar formations which had hosted great sulphide bodies at Sudbury, Noranda, Porcupine and other famous districts. Many geologists felt that greenstones of the Manitouwadge district were so small in size that there was little chance of finding major sulphide deposits."

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I mention this because we are dealing with an area of Pre-Cambrian rocks which has the same general characteristics of those of western Ontario, not necessarily Manitouwadge, and no one can say that we are not going to find mines there. In view of our experience in northern Ontario and Quebec, I think it is fair to say that we are likely to find mines in there east of the Slave River and north of Lake Athabasca.

THE CHAIRMAN: When you say north, are you referring to two general locations?

MR. JEWITT: No. That is an area which lies east of Slave and to the north of Lake Athabasca.

THE CHAIRMAN: Is that the area lying east and north of Uranium City?

MR. JEWITT: Yes, that is what I am referring to. We have to define what we are talking about, because once you get on to Great Slave Lake, then, of course, the country tributary to the Great Slave Lake system is served by either route; but there is a point of cut-off between Great Slave Lake and Lake Athabasca, and I am talking about that area between Lake Athabasca and Great Slave Lake.

THE CHAIRMAN: You really pointed to two general areas, the one outlined in red and the one lying north and east of Uranium City?

MR. JEWITT: Yes. When I was answering your first question I was attempting to show those





general favourable areas in this Pre-Cambrian area of rock between Great Slave Lake and Lake Athabasca. The southern part of that area outlined in red would be served directly from the railroad; I should say from Fort Smith. The northern part, at the northern end, it would be most likely served from Great Slave Lake, in which case it is common to both railways.

THE CHAIRMAN: Before we go to that question of serving the area by railroad we will come back to the question of where favourable areas are. I think you mentioned the northeastern portion of Alberta as being something that is not generally regarded as too favourable. Why do you regard an area such as that as being not too favourable?

MR. JEWITT: I didn't say I didn't regard it.

THE CHAIRMAN: Why might part of the Canadian Shield be regarded as such?

MR. JEWITT: Because it is largely underlain by what is loosely termed granitic rock. Mines have been found of these loosely termed granitic rocks.

THE CHAIRMAN: Granite rock, what a layman might call a granite rock?

MR. JEWITT: Yes. But granite rocks run all the way from true granites to sediments which have been soaked in granite masses and so metamorphosised that it is difficult to tell them







from true granites.

THE CHAIRMAN: And some of those have mineral deposits?

MR. JEWITT: Yes. There is also this point, Mr. Chairman, that in these areas of granitic rocks there are small areas which might be overlooked, such as the one found in Manitouwadge, and I know some parts of northeastern Alberta north of Lake Athabasca do exist, and it is likely to exist in the area of granitic rocks in Alberta south of Lake Athabasca, which actually has been very little prospected, chiefly because it is very difficult to get to and because there is a great deal of overburden. But new geophysical techniques may help us to overcome that. It has already been done in eastern Canada.

THE CHAIRMAN: Is it possible to compare the area you referred to south of Great Slave Lake and between there and Lake Athabasca with the area which lies to the north of Great Slave Lake?

MR. JEWITT: The area to the south -- with the area to the north?

THE CHAIRMAN: Yes. Which is the more favourable looking area?

MR. JEWITT: North, generally, because in the first place, apart from quite a limited area at the south end of Lake Athabasca, the area -- I will show this on the map; it is difficult to say in words.

There is a great deal of overburden all





through this country, but in a general area, oh, roughly about that, this area here ---

THE CHAIRMAN: That is south of the east end of Lake Athabasca?

MR. JEWITT: Pretty well, yes. It is covered by rocks. There are loose, pretty well unconsolidated sediments which have little or no potential. As you come further south here -- this area, once you get away from the delta country, over into Saskatchewan, has the older Pre-Cambrian rocks, in which some areas of the older Pre-Cambrian rocks occur. That is still potential country, and as you go further over, of course, you get a repetition; that is getting beyond Waterways.

THE CHAIRMAN: Do you mind coming back to the question of the area north of Great Slave Lake and the area south of Great Slave Lake down toward Lake Athabasca? Do I understand you to say that the area north of Great Slave Lake is a more prospective area than south?

MR. JEWITT: No.

THE CHAIRMAN: Is it possible to compare them, in your opinion?

MR. JEWITT: Well, you can compare them on the basis of existing mines, and, of course, a comparison there is in favour of the north side because we have Yellowknife ---

THE CHAIRMAN: Apart from the mines, the







introduction?

MR. JEWITT: No; I would say that it would be very risky to say that one area is any better than the other.

COMMISSIONER GAINER: Perhaps this is an expansion on the same subject. In the first part of your statement I think you adhered mainly to the age characteristics of the rocks, but when you refer to the geology of the area this would take into account different structures, I suppose. Is it possible to comment on how the area between Lake Athabasca and Slave Lake -- whether there are structural features which are favourable and do these occur seemingly as frequently as other areas of the Pre-Cambrian? It is really the frequency of occurrence of favourable structures we are interested in.

MR. JEWITT: That is getting down to too much detail. You can make general comparisons in the way of areas of the older Pre-Cambrian rocks which hold the orebodies, but even that is dangerous, because we know very large areas of older rocks which are not valuable and we know of small areas of older rocks which are more valuable, such as Manitouwadge.

COMMISSIONER GAINER: What is the difference between these two kinds of things in the general Pre-Cambrian age structure? Why is it that ---

MR. JEWITT: Why is it that ore occurs here and not there?





COMMISSIONER GAINER: Yes.

MR. JEWITT: If we knew the answer to that, Mr. Gainer, we would have no problems in the mining industry.

COMMISSIONER GAINER: I presume there is some reason historically why mineralization occurs in such a condition, but it seems to be associated with some factors, that it can be determined with thorough study. What I am asking is, is it not generally possible with enough study of an area to reduce, so to speak, the chances or increase the chances of working on them?

MR. JEWITT: That very definitely is so, and that is what every mining company attempts to do. We have our geological staffs just like other companies have; we use not only our own knowledge but that of the Government, and this means putting it together and trying to decide what is the best place to look; when you are there, where is there most likely ore to occur?

COMMISSIONER GAINER: Any work that has been done and carried on at present -- is there anything from all that information, is there anything that would suggest to you anything in favour of the Pre-Cambrian area over the areas between Lake Athabasca and Slave Lake?

MR. JEWITT: No, I wouldn't say that at all. We have worked there off and on for many years; some-







body gets a new idea in this area and we are back in it. We are back in the north end, south of Reliance; we are working there right now geologically, and have been in the last few years. I have, because I happen to know that country in detail quite well myself, certain areas which I want to get back in to, when they haven't something they think themselves may be more pressing.

But you are dealing with a very difficult subject when you are trying to find orebodies, and you need a combination of not only skill and knowledge but also luck. So you work not only where your science indicates but also where your hunches tell you.

COMMISSIONER GAINER: Now, it has been my impression that, aside from proven orebodies altogether, that occurrences, frequency of occurrences, are greater in the area just south of the the east arm of Great Slave Lake than in the middle reaches generally.

MR. JEWITT: Just south of the east arm of Great Slave Lake?

COMMISSIONER GAINER: Yes, in that general northeasterly direction, southwest.

MR. JEWITT: I couldn't say you are entirely wrong, because we are working this east end; but, generally speaking, I wouldn't say there was more there.





COMMISSIONER GAINER: Let's take the whole east arm there and compare that with the middle reaches between the two lakes, just slightly northeast of Fort Smith and north of Lake Athabasca. Now, I think the same number of occurrences have not been indicated here. What I want to ask now is, I suppose this could be a matter of prospecting, and it may also be a matter of ---

MR. JEWITT: It may be a matter of accessibility. It is quite difficult to get into the interior country, for any independent prospector, and I think there is a great deal of work yet to be done in drainage. I mentioned Tsu Lake and Lady Grey.

THE CHAIRMAN: What are the names of those lakes?

MR. JEWITT: Tsu Lake and Lady Grey, and Taltson Lake. When I was doing my work there were no names to these lakes. There is Thekulthili. This area here, in and around the Taltson.

I hope somebody, as a result of my advice, goes out and finds a mine there.

COMMISSIONER GAINER: There is nothing about the general geology, then, of that central region and that north of Lake Athabasca that, to you, would be any more unfavourable than around the east arm of the Great Slave, for instance?

MR. JEWITT: No, sir.







THE CHAIRMAN: You told us that you have been doing some work, or having some work done, in the last three years south of Fond du Lac.

MR. JEWITT: South and west of Fond du Lac.

THE CHAIRMAN: Yes, in that general area. Would you tell us whether you have done anything in the last few years south of Great Slave Lake - - between there and Lake Athabasca?

MR. JEWITT: Yes, we have prospected in the area of the northeast corner of Alberta; down along the Taltson River, from Taltson Lake to this area here. Then we have done work further down, but that is common to both railways, if that is what you are thinking of. Those places I mentioned affect the eastern route more than the western.

THE CHAIRMAN: Now, where would you say the area is that affects the eastern route? Can you draw a line and show us the area? Would you show us the line that divides the area that is tributary to the proposed eastern route from the area that is tributary, say, to Great Slave Lake.

MR. JEWITT: Well, it is a matter of transportation costs, of course, and it would cut off at some point north of Fort Smith. Probably we should think in terms of winter haulage because that is all that you would get to start with, and it would be about the same if there was a road or a railway extension





there, but you could say roughly that you would come up from Fort Smith about halfway in this direction. May be there is as much a difference in freight rate from Fort Smith as from Pine Point, but you might extend that a little higher. I would say in the area we are dealing with you would have a line something of that nature. (indicating on wall map).

THE CHAIRMAN: Do you mind if I scratch a line across there? We will be looking at this later.

MR. JEWITT: That is right; that is just splitting the transportation distance between the lake and Fort Smith.

THE CHAIRMAN: And would it bring the line up to Taltson River?

MR. JEWITT: Your freight, I would expect, would naturally come from Great Slave Lake to some distance inland.

THE CHAIRMAN: Is the Taltson navigable?

MR. JEWITT: No, I am thinking of a summer road.

--- (A discussion at the map between the Chairman and Mr. Jewitt, which was inaudible to the reporter).

THE CHAIRMAN: The area west of Taltson River is delta country?

MR. JEWITT: That is right. As you get further east into the Pre-Cambrian you hit a compromise of distance between the east arm of Great





Slave Lake and the east end of Lake Athabasca in splitting up the territory that is tributary to each place.

THE CHAIRMAN: Would you mind showing us now where you would divide the areas that would be tributary to the proposed railways and to Lake Athabasca? Do you say it would come down like this?

MR. JEWITT: Immediately tributary?

THE CHAIRMAN: Or, is that impossible to say?

MR. JEWITT: Immediately tributary would mean something that is economic to operate and which would make for the hauling out of materials to the existing transportation, because if you have to do something, say, up in this area then presumably the problem would arise of providing transportation for it which would, maybe, mean a branch line.

THE CHAIRMAN: Suppose you were to find something over near Hill Island Lake. How would you think that ore would be brought out?

MR. JEWITT: I would think that would come out most likely through Fort Smith, and if not there then via Lake Athabasca.

THE CHAIRMAN: Do you think it might be something like a 50/50 proposition as to whether it would go to Fort Smith, if there were a railway there, or to Lake Athabasca?

MR. JEWITT: If there were a railway in any place - - if there were a railway going up to Fort Smith







then, of course, naturally there would also be a railway to Peace Point. I was thinking it might be - - if all you required was a seasonal operation such as a gold mine it might be more economic to haul your freight in during the summer from Lake Athabasca rather than by the longer cross-country overland route by road through Fort Smith.

THE CHAIRMAN: That is, if it is a seasonal operation.

MR. JEWITT: Yes, and we are speaking only of transportation.

THE CHAIRMAN: Yes. Gold mining is a seasonal operation. What about other mining operations?

MR. JEWITT: No.

THE CHAIRMAN: They do not lend themselves to it at all?

MR. JEWITT: It is a severe handicap because your product is tied up and you have no revenue for seven months of the year.

THE CHAIRMAN: And that applies to gold.

MR. JEWITT: No, you can fly your gold out.

THE CHAIRMAN: Do you mind going back again to the question of how these areas would be serviced. Consider for a few minutes, Mr. Jewitt, that area lying near the east end of Lake Athabasca.

MR. JEWITT: Yes.

THE CHAIRMAN: Suppose a base metal mine were found there. How would you expect the freight going in





and coming out to be handled?

MR. JEWITT: I would expect a branch line to be built from the Waterways route - - say, from Fort Smith or somewhere north of Peace Point, whichever way is the better. It might even be on the south shore, but, generally speaking, I would expect it would originate probably at Fort Smith, or somewhere near it.

THE CHAIRMAN: You do not think it would be feasible to operate a base metal mine near the east end of Lake Athabasca without a railroad being built through it.

MR. JEWITT: No.

THE CHAIRMAN: You mentioned some of that area to the north being tributary to Great Slave Lake, and you have drawn that pencilled line showing in a general way how the areas would be lined up. Suppose a base metal mine were found on the south shore of the east end of the Great Slave Lake; how would you anticipate that would be handled?

MR. JEWITT: Well, again, it would be a matter of extending the railway, but if the railway were already at Pine Point or Ile du Mort, why, that would be the natural point I would expect for a railroad to be built from to serve the south shore.

THE CHAIRMAN: What would be the situation if a base metal mine were found on the north shore of Great Slave Lake?

MR. JEWITT: Again, you would have the prob-







lem of going around the lake. It would depend on the location, whether you went around the east arm or whether you went around the west arm. It would depend on the location of your discovery.

THE CHAIRMAN: But I take it you feel that any base metal mine in that territory can operate only if there is a railroad built to it?

MR. JEWITT: Yes, that is so.

THE CHAIRMAN: A gold mine is in a different position, and so is a uranium property.

MR. JEWITT: Yes.

THE CHAIRMAN: Because you fly those products out.

MR. JEWITT: Yes. I believe - - now, I am not sure, but they used to fly all their uranium out, but whether or not they do now I do not know.

THE CHAIRMAN: In any event, we know it was always flown out from Great Bear Lake.

MR. JEWITT: Yes, it was flown out from Great Bear.

COMMISSIONER THOMPSON: Mr. Jewitt, we have discussed the Pre-Cambrian quite a little bit. Is Pine Point in the Pre-Cambrian?

MR. JEWITT: No, it is in the Devonian.

COMMISSIONER THOMPSON: Is there a chance that there may be another find west of Pine Point.

MR. JEWITT: Yes.

COMMISSIONER THOMPSON: As far west as Hay





River, or even further west? How would you take that out? Would you take it out around by Fort Smith also?

MR. JEWITT: There is a chance, but not a very good one.

COMMISSIONER THOMPSON: Why?

MR. JEWITT: Because this type of deposit in the Devonian is rather unusual, to start with. Although there are a number of them the ore is characteristically rather low grade, so you would have to have a combination of favourable circumstances to make it profitable. When you have that then you have an ore body; when you have not got it then it is not ore even though it may be mineral. We do know of mineral occurrences elsewhere in the Devonian. There are some on the north shore of Great Slave by Windy Point, and I believe you know of them, which have been explored in the last few years, unsuccessfully. There are also occurrences of lead-zinc in the Devonian, and even on the Prairies here, but they are quite unworkable because of their depth. The same thing would occur rather quickly going west in the younger formations in this particular area. That is, you would get to uneconomic depth rather quickly.

COMMISSIONER GAINER: There is one other point I would like to ask you about, if I may, Mr. Jewitt. I presume from your brief on the first page that you would be prepared to evaluate the economics of your mining operation, independent of whichever route happens to be chosen for the railroad. You would advance argu-





ments for the east route, but as far as the Pine Point Development is concerned, if it is economic to go ahead with it as a mining proposition you would be prepared to do this, and I take it the company is prepared to do this?

MR. JEWITT: Yes.

COMMISSIONER GAINER: Would that be right?

MR. JEWITT: Yes.

COMMISSIONER GAINER: Now, somewhere here in your brief you recommend a deviation of the route which would give the lowest possible cost of transportation?

MR. JEWITT: Yes, so far as Pine Point mine is concerned, and so far as Cominco is concerned, that is our only point as a company.







We think in general purposes, for Canada, because of reasons which I have explained, that the eastern route is a better route for developing new minerals, but so far as Pine Point Mines go, our only interest is to get as low a freight rate as possible because the freight rate is a substantial item of cost.

COMMISSIONER GAINER: Yes, and even though one particular route may be more economical from the point of view of railroading -- bringing in more revenue, and so on -- this would not necessarily reflect in a lower freight rate to you as a shipper? Would that be true, provided the freight rates are integrated with rates throughout the rest of the country?

MR. JEWITT: I am not sure I got your question, because if it deals with freight rates, that is a very complex subject and I know very little about it.

COMMISSIONER GAINER: Well, in any event, distance would then be the main consideration -- the cost to you of shipping?

MR. JEWITT: Yes, distance seems to be at least one factor, and comparative distances, and with some fifty-odd miles of longer route from Edmonton, we expect it would be a higher freight rate and, of course, that is quite important.

THE CHAIRMAN: How much higher, Dr. Jewitt?





MR. JEWITT: That is out of my field, Mr. Chairman. This is just a surmise on my part because I am not a railroad man, and I am amazed at what happens in freight rates, but if you take a ton-mile basis, which I think must be some control on what is done in the way of freight rates, you can say, I suppose, that the rate would be something in the order of one cent or one and a half cents per ton-mile. Well, that is 50 cents per ton concentrate extra -- there is 75 cents per ton of concentrate.

COMMISSIONER GAINER: On that point for our later evaluation, could you give us an estimate on current prices what a ton of concentrate would bring, given your percentages that you figure on coming out with?

MR. JEWITT: I am sorry, I didn't understand that.

COMMISSIONER GAINER: About what value could we place on a ton of concentrate of the type you plan to ship?

MR. JEWITT: For railroad freight purposes?

COMMISSIONER GAINER: No, gross value, so we can get some idea of how important an additional dollar on freight would be relative to your value of a ton of concentrate.

MR. JEWITT: The value in terms of the







value of the product?

COMMISSIONER GAINER: Yes, the value of the concentrate to your smelter as it would be taken into your smelter, less freight?

MR. JEWITT: That, of course, depends essentially on metal prices. I can look in my notes and give that figure to you.

COMMISSIONER GAINER: Could you give us a quick calculation based on present prices?

MR. JEWITT: It is based on what we call smelter settlements, and those are quite complex calculations. You can't just go on gross values. Of course, these concentrates we speak of are a mixture of lead and zinc.

COMMISSIONER GAINER: Yes.

MR. JEWITT: In general terms, I think you could say that about \$100 per ton of concentrate.

COMMISSIONER GAINER: One hundred dollars per ton?

MR. JEWITT: Yes.

COMMISSIONER GAINER: Thank you.

MR. JEWITT: That is before freight charges.

COMMISSIONER GAINER: Yes, that would be at the mine, then?

MR. JEWITT: Yes.

THE CHAIRMAN: Have you estimated the freight charges between Pine Point and Trail other than the figure of one cent to one and a half cents





per ton-mile?

MR. JEWITT: Well, I was just taking those as tight figures, because if you look at freight rates you will find a great variation in ton-mile rates.

THE CHAIRMAN: Yes.

MR. JEWITT: But for this general class of freight that seems to be a range that one could take -- one cent to a cent and a half per ton-mile. In some instances it can be higher -- quite considerably. I know others where it is lower. However, that seems like a reasonable range to translate in terms of extra cost to an operation.

THE CHAIRMAN: If you reach an agreement with the railway concerning freight rates, it is a published rate, isn't it?

MR. JEWITT: Yes.

THE CHAIRMAN: Then you would not be disclosing any confidential information if you were to tell us what you thought the rate might be?

MR. JEWITT: Oh, there is no published rates, Mr. Chairman.

THE CHAIRMAN: No, but the situation with regard to railway rates is this, isn't it: that if you made an agreement with the railway going to Pine Point to carry your concentrates to Trail, that would be something that would be published? It wouldn't be a confidential agreement?

MR. JEWITT: Oh, no.





THE CHAIRMAN: So, if we asked you anything about the rates you anticipate, we would not be asking for confidential information?

MR. JEWITT: No, but all I can say is, Mr. Chairman, what I hope we will get, and I would hope we would get a cent a ton-mile, but I don't really expect it.

THE CHAIRMAN: You are hoping for a cent a ton mile, but you are afraid it will be a little more?

MR. JEWITT: Yes, I think it is probably closer to  $1\frac{1}{2}$  cents.

THE CHAIRMAN: Yes.

MR. JEWITT: But I really have no direct information on that.

THE CHAIRMAN: I take it you have not carried out any negotiations with the railways?

MR. JEWITT: We are not at that point yet where we can negotiate. Once the idea of putting in the railroad is there, then we will negotiate on a firm basis, of course.

THE CHAIRMAN: You said in your brief that the company understands the reason would be considerably more traffic over the Waterways route than over the Grimshaw route, and when you said you understand that, am I assuming correctly that you have not looked into that situation?

MR. JEWITT: No, we feel that is out of







our field. We make our best guess in the mining industry, and we leave the rest to others.

THE CHAIRMAN: It is something we are very much interested in, and if you did have detailed knowledge of it, we would like to have it.

MR. JEWITT: When I say that, I am quoting from information such as the Edmonton Chamber of Commerce or the Edmonton Chamber of Mines. I had not heard the other briefs at the time we wrote this.

THE CHAIRMAN: Can you tell us anything about the possibilities of an international market -- say, a market in Japan for Canadian minerals?

MR. JEWITT: You mean a long-range market?

THE CHAIRMAN: Well, the present or the long-range market?

MR. JEWITT: Well, in lead and zinc we are now passing through a very difficult period. There has been over-production for the last several years for various reasons, one of them being interference with the fuel market, and we are now passing through a period of adjustment. How long that is going to last is anybody's guess, but we don't think it is a permanent situation, and we think that in a few years the present difficulties are likely to be ironed out. In other words, to put that in terms of future markets, we agree with the appraisal of reports such as that of the Gordon Commission or the report in the United States that there will be a





substantially greater demand for these metals in the not distant future.

THE CHAIRMAN: How many years -- five years or twenty-five years?

MR. JEWITT: We normally have adequate demand for all our production and all the production in most mines, but due to the artificial prices which were induced during the war and immediately after, overproduction did occur and it will take a long time for consumption to catch up to that. It is anybody's guess how long. I would say three to five years. Five years may be an outside, or three years may be outside, but we think it will take a little time to iron it out. We don't feel at all pessimistic about the future of metals.

THE CHAIRMAN: Does that apply to other metals than lead or zinc -- copper as well?

MR. JEWITT: Yes, certainly; base metals.

THE CHAIRMAN: When that situation does iron itself out, does there appear to be a large market for Canadian metals in the Orient?

MR. JEWITT: If you would forecast an increasing standard of living for those people, well, the answer must be Yes; because increasing the standard of living does demand a much higher use per person of those metals than they are using right now. Our use of lead and copper -- the principal base metals alone -- is far higher than







it is per person in China or Japan or Indonesia or any of those countries. So, if they are going to raise their standard of living, it seems obvious that there will be a much greater demand.

THE CHAIRMAN: Would you hope to supply a large portion of that Oriental market?

MR. JEWITT: Yes, we would expect to get our share of the market anywhere in the world. We sell on the world market.

THE CHAIRMAN: Do you ever sell concentrates, or is it always the refined metal?

MR. JEWITT: Very rarely do we ever sell concentrates. It would have to be some special condition -- a demand by some particular smelter for concentrates. We produce refined metal.

THE CHAIRMAN: And you sell that?

MR. JEWITT: Not only lead and zinc, but others too.

THE CHAIRMAN: Are there smelters in Japan and China?

MR. JEWITT: Oh, yes.

THE CHAIRMAN: Where do they get their concentrates from?

MR. JEWITT: Lead and zinc -- compared to our output they have small mines. They buy concentrates all over the world -- South America and Southeast Asia.

THE CHAIRMAN: Why don't they buy concentrates





from Canada?

MR. JEWITT: I would say that they would if they could. I really don't know whether they do or not. I don't think they do. It would be only because the Canadian mines could get a better deal elsewhere. We operated a small copper-lead-zinc mine on the north coast of British Columbia, and we have now no facilities for smelting copper, so we sold our copper concentrate on the best market, and the best market happened to be Tacoma in the State of Washington. We considered Japan, but they could not give us a good enough deal. So, if Canadian concentrates are not going to Japan, that would be the reason.

THE CHAIRMAN: Would you feel able to tell us whether the Japanese price was close to what the Tacoma people offered?

MR. JEWITT: I forget the actual margin, but it was substantial: it was certainly several dollars per ton difference in price.

THE CHAIRMAN: How do the values of concentrates of the different metals compare? You have mentioned \$100 a ton for your concentrates that you expect to produce at Pine Point: is that a fairly general value for lead-zinc concentrates?

MR. JEWITT: No, that is an average price; that is a mixture, because we have in grade about two to one zinc to lead, and in concentrates about sixty-four -- it is fairly close to the same proportion.





However, there is quite a bit of difference in price depending on what you take -- whether it is present metal prices or an estimate of what the price will be over the next twenty years. Of course, it depends also on the percentage of the metal in the concentrates. Lead in a concentrate will vary greatly according to the ore, and in the Pine Point concentrates it will run probably 70 or 72 per cent lead plus a little zinc, and the zinc will probably run 60 per cent zinc in the concentrate.







So that affects the value, and this indicates when you get on top - -

THE CHAIRMAN: Do lead and zinc usually occur together?

MR. JEWITT: Very frequently. Zinc also occurs in copper, quite commonly; lead not commonly.

THE CHAIRMAN: Would this be a fair generalization? Can you you generalize to say that lead concentrates range in value from \$75.00 to \$125.00?

MR. JEWITT: Yes. Actually you could go higher than that in lead. You could say the range is, in round terms, from \$75.00 to \$150.00.

THE CHAIRMAN: That is on the basis of present-day prices for lead?

MR. JEWITT: Roughly - no, it would be less than that on lead; it would be \$120.00, \$125.00. That would be the general order of things, depending on your concentrates, depending on its impurities, depending on the percentage of metal in it.

THE CHAIRMAN: What about copper concentrates? Are they more valuable than lead?

MR. JEWITT: Yes. I haven't any figures, it is not a figure I deal with very often; but a copper concentrate will run from usually 20 per cent, 25 per cent metal. If you have 160 pounds of metal and if you multiply that by 25 - -

THE CHAIRMAN: \$40.00.





MR. JEWITT: 25 per cent. You have got 25 per cent, you have got 500 pounds. 25 per cent is 500 pounds. If you take 80 pounds and put 25 on that, you would have roughly \$100.00. It is about the same.

THE CHAIRMAN: Do you know what the situation is with regard to nickel?

MR. JEWITT: No; I am not familiar with nickel at all.

THE CHAIRMAN: This argument has been advanced to us, Mr. Jewitt, and we would appreciate your comments. Don't try to answer this question until we have had a few minutes adjournment, but the suggestion has been made that if the railway is built along the westerly route it makes it possible, makes it a little easier, to get the concentrates from the Northwest Territories to the sea coast and therefore available for the world markets a little more readily than if the railway comes along the inland route, that is Waterways. I would like you to think that over and we would like to have your comments on it.

MR. JEWITT: It is so general a question that it can't be answered precisely. I don't know what the freight rates are or will be, because that is the greatest factor. If you took the distance via, say, Edmonton as compared with, say, via Dawson Creek - I don't know. Where would it go? It would be somewhat in favour of Dawson Creek. Thereby you would have a lower freight rate for anything that went to the coast.







But I think zinc would most likely end up in the Trail plants, but that has no bearing on it. The copper, I would say, would most likely go to the coast, rather than eastern Canada. In that case there could be a small advantage.

THE CHAIRMAN: Isn't Tacoma the only place where copper can be refined?

MR. JEWITT: Yes, on the west coast.

THE CHAIRMAN: We have had a proposal, a letter written to us from the Sheridan-Gordon Company saying that if copper is available here they would increase their smelter at Fort Saskatchewan so that copper can be treated there as well as nickel.

MR. JEWITT: Well, that could be possible, yes.

THE CHAIRMAN: And that, of course, is an argument in favour of the easterly route, and it may be the answer to the suggestion that it is an advantage to getting the copper concentrates to the sea coast.

MR. JEWITT: Yes, that could be. Of course, you deal with pretty low grade copper; the values lie chiefly in the nickel rather than copper. But you could treat your copper there, yes.

THE CHAIRMAN: They have written saying that they would like to treat copper, if there are copper concentrates available.

MR. JEWITT: That would be, I would say, an effective answer to any possible better rate to the West





Coast. If you are dealing with copper concentrates, the nearer you can get the treatment plant the better, because you are shipping the metal.

THE CHAIRMAN: Concentrates don't deteriorate?

MR. JEWITT: They will in the course of time, but not in the kind of time you deal with in shipments. They will oxidize in time.

MR. FRERE: May I interject, Mr. Chairman?

There were certain questions asked of Mr. Jewitt in respect to prospecting and to work being done and sales on markets. I think I am right that when Mr. Jewitt is answering those questions he is answering them as Vice-president in charge of mines of Consolidated Mining and Smelting Company of Canada and not of the Pine Point, because Pine Point is not doing any prospecting at the moment or selling any metal.

THE CHAIRMAN: Would you mind looking at the last paragraph of your brief? You referred there to the possibility of the development of the bituminous sand area north of Waterways. It has been suggested by the Royalite representatives that they might be able to sell some of their products manufactured at their plant near Mildred Lake to your proposed plant at Pine Point for the purposes of developing power. Can you tell us anything about that?

MR. JEWITT: I think I can, sir. A few years ago I had some conversations with officials of the Royalite Company, because the matter of power is very





important, of course, to any mining operation such as we would have at Pine Point, and we have to chose between diesel power, which might be either oil or gas, or water power, and we have tried to get all the information we can. It was mentioned to us that Royalite were considering this development of the sands, and so we approached them as being possible suppliers of diesel oil. They were very interested in the project, not necessarily from the standpoint of supplying us with diesel oil; they suggested they might put in a thermal plant for supplying thermal power, which we didn't think was reasonable, or sell us the end product in the first processing of the bitumen from the sand, which is a coke, and they thought that coke might be sold to us as a source of thermal power. We were quite interested, but so far their project has not developed to the point where they can quote actual prices. I would certainly expect them to be competitive or possibly even more competitive than fuel oil.

THE CHAIRMAN: Are there any estimated prices?

MR. JEWITT: No, there are not.

THE CHAIRMAN: No prices have been mentioned?

MR. JEWITT: No, we had no prices at any time. It was not advanced to the point where you could make actual economic estimates.

THE CHAIRMAN: Have you had any discussion with them since a few years ago?

MR. JEWITT: No, not since that time. We







have been awaiting the provision of transportation facilities; we haven't pressed them at all.

COMMISSIONER GAINER: How much can you tell us about your power requirements in your hydro studies, your alternative studies, rather than a diesel plant?

MR. JEWITT: Well, we would have a demand of something in the order of 10,000 horse power, and with transmission requirements we probably would require a minimum installation of something in the order of 15,000 horse power. That is a very small installation, of course, for a big river like Great Slave, and a small installation on a big river is an expensive business. If you have a small plant like Blue Fish Lake in the north, you can get a reasonable cost. But it would be something in the order of a million dollars. On the other hand, diesel oil - that would give us operating costs of something in the order of 12 cents a kilowatt hour, whereas the hydro would be very low, but it would be five times the capital to invest in the hydro than you would have in the diesel.

--- A short recess





THE CHAIRMAN: Mr. Jewitt, there is just one question I would like to ask you concerning your plans for power. Do you feel at liberty to tell us whether you have made any arrangements or any plans as to how you would generate your power at your Pine Point Mine other than what you have told us.

MR. JEWITT: We have not made any definite arrangements or made any definite decisions yet, Mr. Chairman. We have examined both the hydro power and, of course, diesel power, and made estimates of both. As I mentioned before, there is a great difference in the operating costs and, of course, there is a great difference in the capital cost. Diesel power is very much cheaper capital-wise than hydro power. We have made various studies, and we have done some diamond drilling, and done some seismographic work at the Mountain Rapids and Smith Rapids, and we have an application in for some form of permit - - it is whatever application is required by the Province of Alberta for a priority. It is for what we would like to have, but I do not think the laws of the province do grant any priority, but I believe if you do substantial work and indicate a serious intention your application is likely to receive a favourable consideration. Is that not the situation, Mr. Frere?

MR. FRERE: Yes. We have a preliminary permit, Mr. Chairman.

THE CHAIRMAN: Without going into detail







can I say this, that you have considered the two types of power generation, and each one seems feasible, and you do not know at the moment which one seems the more profitable?

MR. JEWITT: Yes. If it would be possible to have other mining companies come in with us in the provision of power then, of course, it becomes much more attractive.

THE CHAIRMAN: Have you considered at all the question of the use of natural gas from Northern Alberta and Northern British Columbia?

MR. JEWITT: Yes - - well, the economics of that are quite restricted for what is a relatively small demand. 10,000 horse power is not much in terms of transmitting gas.

THE CHAIRMAN: A gas pipeline would not be feasible?

MR. JEWITT: No, it would be too expensive into Pine Point from our source that we know of at present; that is around the Upper Hills Lakes. That was the last one I had information on. There is also drilling near the west end of Great Slave Lake, but both of those points are too far from Pine Point.

THE CHAIRMAN: There is a large gas well at Petitot Lake, is there not, Mr. Hume?

MR. HUME: Yes.

THE CHAIRMAN: Is that any closer than the points that Mr. Jewitt has mentioned?





MR. HUME: It is in British Columbia about 16 miles south of the border of the Northwest Territories, but it is a long way from Pine Point.

MR. JEWITT: That is too far. Our engineering studies indicate that it has got to be substantially less than 100 miles before we can build a pipeline for that sole purpose.

THE CHAIRMAN: Substantially less than 100 miles?

MR. JEWITT: Yes. I could not give the figure offhand as to where the saw-off would come, but that depends again on what price you have to pay for the gas.

THE CHAIRMAN: You have not considered the question of any type of fuel such as that from the Royalite plant at Mildred Lake, other than the diesel fuel that you may buy for diesel motors?

MR. JEWITT: No, because while we can estimate the price we would likely have to pay for diesel oil, because it would be a competitive price, we have no way of telling what price they would put on the coke.

THE CHAIRMAN: Thank you very much. Mr. Fouks, who is representing the British Columbia Government, wants to discuss with Mr. Feehan during the noon adjournment some questions he would like Mr. Feehan to ask you, so I think we will adjourn now.





We are running a little short of time. I wonder if it is convenient to start again at 1.30?

MR. FEEHAN: I was wondering if you would like to ask Mr. Jewitt for his observations about the possibilities of a port on the south shore of the lake before we adjourn, and then perhaps the cross-examination - -

THE CHAIRMAN: Yes; would you ask him those questions.

MR. FEEHAN: Yes. First of all, Mr. Jewitt, would it be absolutely essential that a railway go to the Pine Point Mine - - that is, directly to the Pine Point Mine - - or would it be possible to tranship by barge to the railhead at a different port.

MR. JEWITT: By barge?

MR. FEEHAN: Yes.

MR. JEWITT: No, because you have the transportation for only such a short season.

MR. FEEHAN: You consider, then, that the railroad must touch the Pine Point Mine?

MR. JEWITT: Yes. There is this point, though, when you say "must touch" that could be anything from 100 yards to 100 miles, but I would say that the railroad coming to the actual area of operations is certainly very desirable.

MR. FEEHAN: I see. You would not think it would be feasible to load and then tranship to the railroad at a railhead a distance from the Pine Point







Mine?

MR. JEWITT: Any double handling of the material enters into cost, and as soon as you enter into cost you have something that is not as desirable as the other situation.

MR. FEEHAN: Yes; I ask that question because Pine Point is some 13 miles south of the shore of Great Slave Lake, and there has been some discussion about the various ports which might be constructed along the south shore. One of them ~~is~~ Ile du Mort at Pine Point, and another at Hay Lake, and another at Fort Providence. Would you tell us what you know about those various possibilities regarding the construction of the ports.

MR. JEWITT: Well, Mr. Chairman, I am not a port expert. I am a mining man, but, naturally, we have had to have quite a bit to do with boats and aircraft, and I have been in these three places. We actually landed at Ile du Mort some time ago, and I have flown over it a good many times since. I was not impressed by its suitability as a terminal harbour. However, I was rather surprised to find, in talking to the officials of the Department of Public Works in Ottawa two or three years ago, that they are quite convinced that a suitable harbour for the mining and shipping that we have on Great Slave Lake could be constructed at Ile du Mort at not too great expense. It would be a matter of dredging and enlarging what





exists there. It is at present too shallow. That is not my opinion; that is the opinion of the Department at that time.

At Hay River I do not see any objection, or anything much in the way against a suitable harbour there. There is deep water at the mouth. I believe they have trouble with the perma-frost. The hotel has moved around several inches in different directions since it was erected there, as you probably know, but I do not think it is anything too serious. With regard to the mouth of the Mackenzie, it is just a matter of finding a suitable spot on the bank of that very large river.

MR. FEEHAN: For your operations, doctor, which would be more advantageous to you?

MR. JEWITT: Speaking for Pine Point Mines, it makes no difference at all. Speaking for Cominco and our gold mining operations there is not much - - I would say there would not be very much difference.

MR. FOUKS: There would be no cost factor problem between Pine Point and Hay River?

MR. JEWITT: I am sorry; I did not catch the question.

MR. FOUKS: There would be no cost factor problem, whether it be at Pine Point or Hay River?

MR. JEWITT: Whether the harbour will

- -

MR. FOUKS: No, the railroad.





MR. JEWITT: Do you mean whether the railroad terminated at Pine Point or Hay River?

MR. FOUKS: No, the harbour.

MR. JEWITT: As far as the harbour is concerned it does not matter.

MR. FEEHAN: I gather the particular use you would make of the harbour would not be very much at all?

MR. JEWITT: I do not think that is correct. I do not think that inference is quite right, because, after all, we have been operating a gold mine there for over 20 years, and we expected to continue to operate it and we expect to do more. While the location is not too significant on the west arm of Great Slave Lake the fact of whether or not there would be a harbour is of importance. We ship 4,000 or 5,000 tons of freight altogether every year.

MR. FOUKS: May I ask you in regard to one point there? Is this a fair approach, that a harbour at Hay River with a spur to Pine Point would probably satisfy you the best; it would satisfy both needs?

MR. JEWITT: What is the other need that you speak of?

MR. FOUKS: I am talking about Pine Point and a harbour. You say Hay River, from the point of view of a harbour is - -

MR. JEWITT: No, I do not think it means







anything unless it added mileage to the railroad. If there is no difference in the mileage and no difference in the freight rate, it would make no difference to Pine Point Mines.

MR. FOUKS: Of course, we have no information on the freight rates, and you have no information on that either, have you?

MR. JEWITT: No.

MR. FEEHAN: I have no further questions.

THE CHAIRMAN: We will adjourn now until 1.30 p.m.

--- Luncheon adjournment.





---On resuming at 1.45 p.m.

THE CHAIRMAN: Mr. Feehan?

MR. FEEHAN: Yes, I have some questions, sir.

Dr. Jewitt, we received evidence yesterday that there was a proposed road around the east end of the lake which would eventually go through to Yellowknife, and in referring to the various areas which would be served by rail and water this morning, you drew a circle below Great Slave Lake. In the light of the fact that there is going to be a roadway -- and you can see it on the map Exhibit 52F -- in the event that that roadway is completed, would that have any effect on the service provided by the railway or, alternatively, by the water?

MR. JEWITT: May I just repeat that: if that road is built, would that have any effect . . . ?

MR. FEEHAN: On any servicing of those areas?

MR. JEWITT: Well, of course -- you mean, I suppose, servicing them from Great Slave Lake?

MR. BISHOP: Mr. Chairman, could I explain that question? This morning, for the consideration of the Chairman, you arrived at a line on a map which more or less provided the areas which would be tributary to Great Slave or the railway at Fort Smith.

MR. JEWITT: Yes.





MR. BISHOP: And what I wanted to explore was whether we would find a different line for certain types of mining, at least, showing the areas tributary to Great Slave Lake or tributary to the road or railroad?

MR. JEWITT: I think I can answer that question easily. Any improvement in transportation will be sure to upset the existing pattern of transportation. Any improvement in existing facilities would upset the existing pattern, and if we had the road up there -- it is a development road, and a development road is, from what the federal government has said, primarily to serve as a development to speed up the prospecting and opening up of the country; it is not necessarily the ultimate form of transportation. That would depend on the type of ore and type of mining that would develop. If it were a gold mine, certainly that is all that would be necessary -- the development road. That would certainly affect that roughly east/northeast line which I sketched out this morning, because anything within reasonable distance of that road would naturally centre on that road rather than Great Slave Lake.

MR. FEEHAN: After the construction of that development road would you anticipate an increase in prospecting in the immediate vicinity of the road?







MR. JEWITT: Definitely, yes.

MR. FEEHAN: Would it be a substantial increase over and above what is being done now?

MR. JEWITT: I would say yes.

MR. FEEHAN: In the event that some base metal orebody were found, do you feel a spur line would be necessary to make it produce?

MR. JEWITT: Yes.

MR. FEEHAN: So, in any event, a spur line is going to be necessary into the orebody?

MR. JEWITT: A base metal orebody?

MR. FEEHAN: Yes.

MR. JEWITT: Yes, essentially.

MR. FEEHAN: A spur line could be constructed from Pine Point, or from any other point along the east route: would that be correct?

MR. JEWITT: Pardon?

MR. FEEHAN: A spur line into that area could be constructed from Pine Point or Fort Smith or from any other area along the east route?

MR. JEWITT: Yes. When you say "from any point", you would naturally build it from the one which cost the least -- the shortest distance.

MR. FEEHAN: So, one of the greatest advantages in building the east route would be to shorten the spur line into some orebody which would be found at a later time?

MR. JEWITT: Yes.





MR. FOUKS: I may have missed the point, but if I understand the good doctor correctly, the part covered by the red line can be prospected by the development road which the government is going to develop; is that correct?

MR. JEWITT: I think there was some little misapprehension there. When I was outlining that elliptical area, I think your question then was, generally, the location of the more favourable ---

THE CHAIRMAN: Yes, that is so.

MR. JEWITT: When we were outlining the areas which were likely to be served from Athabasca or Great Slave, we sketched a dotted line -- actually, it is a zig-zag line -- which is roughly about east/northeast.

MR. FOUKS: The roads we have heard about that I understand the government are talking about -- you call them the development roads; in other words, they are for development?

MR. JEWITT: To open up the country -- except for possible gold mines.

MR. FOUKS: And uranium?

MR. JEWITT: And possibly uranium.

MR. FOUKS: If they were to find an ore-body, base metal, a spur line would be necessary; is that correct?

MR. JEWITT: Yes.

MR. FOUKS: Now, following it to its





logical conclusion, from Pine Point that could be just as easily built -- assuming something is found -- and nothing has been found there.

MR. JEWITT: Built from where?

MR. FOUKS: Pine Point. You said earlier this morning a spur line would be necessary from Pine Point?

MR. JEWITT: Yes.

MR. FOUKS: And we now have a base: so, we can develop by the development roads, and assuming something is found, it could go from Pine Point?

MR. JEWITT: It would go either from Pine Point or some more convenient point to the south.

MR. FOUKS: If one was available?

MR. JEWITT: Yes. Mr. Chairman, this point about a railroad being necessary is receiving a lot of attention, but maybe I can point out that in various situations through Canada, where base metal mines have been found, railroads are built right away or at the same time as production takes place. There are a number of instances of that: Lynn Lake is one; Heath Steel in New Brunswick; the Chibougamou country in Quebec; Manitouwadge is another. Wherever these things happen, spur lines are built, and in all those cases -- certainly some of them -- they are quite short railroads. Manitouwadge is, I think, twenty or thirty miles; Heath Steel was twenty miles; Chibougamou was







further. However, quite short distances are built.

MR. FOUKS: This is not my field, and I admit it, but for information, did the railroad go in first or did they find the orebody first?

MR. JEWITT: They found the orebody first.

MR. FOUKS: Thank you.

MR. JEWITT: That again would be qualified by saying "in recent times". In the earlier days of the century, when taxation and government control was not so pressing a matter, the railroads used to build development. That happened in our own country, and it was very fortunate for the railroads too.

MR. FOUKS: Assuming we are using government money, it is better the other way round.

MR. FEEHAN: You told us this morning your company had spent a great deal of money in the area between the two lakes -- Athabasca and Great Slave: are you at liberty to tell us whether or not they have made any finds other than Pine Point?

MR. JEWITT: In the area between Great Slave Lake and Lake Athabasca?

MR. FEEHAN: Yes.

MR. JEWITT: We have only had one operating mine there -- well, Pine Point is not in operation. We have had one operating mine on Lake Athabasca -- the Box mine, which operated quite successfully before the last war, but with the increase in the cost of labour, etc., and the constant





level of the price of gold, we were unable to continue. That is the only other orebody we have found. We are still hoping.

MR. FEEHAN: Do you know of any other mining company that has made any finds?

MR. JEWITT: Well, yes: the Eldorado has made a very successful mine which is probably one of the lowest cost producers in Canada; and there are several other mines in the immediate area.

MR. FEEHAN: There has been mention at the previous sittings of an organization -- I believe the name Hirshorn came up: could you tell us anything about their finds?

MR. JEWITT: No, I am afraid I couldn't. Mr. Hirshorn has no connection with our organization. To reiterate what I said this morning when you were asking about specific finds, that is something which has some bearing. It would be very fortunate if you were always able to have your orebodies ahead of you. In this specific instance, whether it is east or west doesn't matter. This development railroad is fortunate in that it has specific orebodies at Pine Point which go generally to a large part of the freight necessary to keep the railroad in financial health.

MR. FEEHAN: Would you be able to give us any rough estimate -- having regard to your own expenditures in that area, and I am still speaking of





the area between the two lakes -- would you give us any rough estimate of the amount of money spent in order to locate orebodies?

MR. JEWITT: No, I don't think I had better try that. That would be really gazing into the crystal ball, because prospecting has been going on for quite a few years. Certainly, our company sent engineers there on an exploration trip as far back as 1923, or 1924 I think it was. We were among the first, if not the first, in that particular area, and it has been going on ever since. I think it would be almost impossible to estimate the amount of money that has been spent.

MR. FOUKS: Mr. Chairman, that question was my fault: would the doctor perhaps indicate whether spending half a million dollars would be a lot of money in that area?

MR. JEWITT: You mean for one company, or for everybody?







MR. JEWITT: You mean for one company or for everybody?

MR. FOUKS: For yourself, your company.

MR. JEWITT: That would be a substantial program, yes.

MR. FOUKS: Would you have spent that much, do you feel, over the years?

MR. JEWITT: Yes.

MR. FOUKS: Many times more?

MR. JEWITT: Many times more?

MR. FOUKS: Use multiples if you like: three times, ten times, one hundred times?

MR. JEWITT: I would say we have spent several times that, yes.

MR. FOUKS: Thank you.

MR. FEEHAN: Reference was made also to your differential of 54 miles in the east and west routes going from Pine Point to Trail, a total of 1,351 miles on the Grimshaw route. Would it not be fair to take into consideration what happens to the mineral after it has been refined? I understand they all end up in Toronto or vicinity, so the total mileage covered would not be the 1,350 but something considerably more than that.

THE CHAIRMAN: What bearing has that on the problem, Mr. Feehan?

MR. FEEHAN: I am instructed to ask the question, Mr. Chairman.





MR. FOUKS: I am at fault - -

THE CHAIRMAN: If it travels around the world 50 times, does it alter the position?

MR. FOUKS: I am suggesting that in the cost factor 54 miles out of the total is not a lot. 54 miles out of 54 would be extremely expensive for Pine Point to bear. If, for instance, it is going to go a thousand and fifty-four miles or a million and fifty-four miles, it becomes negligible.

THE CHAIRMAN: That is a simple matter for you to advance in argument, Mr. Fouks. I think we can understand it. We can, as a Commission, estimate the fraction of what 50 cents is of a hundred dollars.

MR. FOUKS: Yes. I thought if the doctor would indicate the total distances the product would travel we would have a better guide as to what the west route would be compared to the east.

THE CHAIRMAN: You would like the total distance?

MR. FOUKS: Yes. If the Commission feels

- -

MR. JEWITT: If I may take a shot at answering the question, Mr. Chairman - I really don't think it is significant, because certainly the Pine Point metal loses its identity as soon as it goes into the Trail plants. I think it is about a third in Canada, and the rest in world markets. Is that





right, Mr. Frere?

MR. FRERE: I think that is right, although I wouldn't be too sure.

MR. JEWITT: So the transportation of a lot of metal - some of the metal would immediately go south, some, say, to Chicago, more to Montreal and eastern markets in Ontario, and, of course, a great deal goes to British markets and their subsidiary markets all over the world. I don't think that really is a factor in considering the effect of extra mileage on the concentrates from Pine Point to Trail. What is a factor and what is important to me as president of the company and responsible to our shareholders - I think we have some 770 odd shareholders - is to operate that property as economically as I can, to give them the maximum amount of profits; and if we take, say, a cent and a half or, for round figures, 2 cents at a dollar a ton, that amounts to a substantial sum a year, and that is an amount that any operator has to consider and watch carefully.

THE CHAIRMAN: Is that enough, Mr. Fouks?

MR. FOUKS: Yes.

THE CHAIRMAN: Would you like something more?

MR. FOUKS: No, it is all right, Mr. Chairman; that's fine.

THE CHAIRMAN: We haven't got the distances the ore travels.







MR. FOUKS: Without it leading to another branch of the discussion, and the theory that the product goes from Pine Point, the cost factor isn't, I am suggesting, as important as brought up in the particular brief, and the main point in the Pine Point brief is the 54 miles, and the suggestion is that it isn't important in the total movement of that ore.

But that is satisfactory, Mr. Chairman.

THE CHAIRMAN: Does the brief say that it is important?

MR. FOUKS: I am suggesting that it is the focal point of the brief. I may have misunderstood it. It is presumed that there will be more traffic to Waterways, but the only actual factor is that this 54 miles differential would add appreciably to the cost of shipping, and that is the reason I picked it up. But I am satisfied with that, Mr. Chairman.

THE CHAIRMAN: Any more questions?

MR. FEEHAN: I have no further questions, sir.

THE CHAIRMAN: That is all. Thank you very much.

I understand the brief for the Northern Alberta Railway is going to be presented to us by Mr. Boyd and Mr. Levesque.

MR. BOYD: Yes.

THE CHAIRMAN: You have with you Major Charles and Mr. Rotstein.





MR. BOYD: Yes.

MR. FOUKS: Mr. Chairman, these are comments made on the brief.

THE CHAIRMAN: Mr. Feehan, I have just seen this brief now, and perhaps you would like this as an exhibit, Mr. Fouks.

MR. FOUKS: Yes, Mr. Chairman.

MR. FEEHAN: I have just got it this moment, sir.

MR. BOYD: I am not quite clear. Is this an analysis on our brief, sir?

MR. FOUKS: It is just comments on it, sir.

MR. BISHOP: Could we have a copy of those comments, Mr. Chairman?

MR. FOUKS: We will get a copy for you, Mr. Bishop.

THE CHAIRMAN: It has just been prepared now, and I think perhaps we will look at it later. It would be better to have it discussed after the railway company's brief has been presented.





SUBMISSION OF  
NORTHERN ALBERTA RAILWAYS

Appearances:

Mr. G. W. Boyd	Commission Counsel for C.N.R.
Mr. D. J. Levesque	Assistant Solicitor for C.P.R.
Mr. J. L. Charles	Construction Engineer - Re: Aspects of Construc- tion and Cost of Line. C.N.R.
Morris Rotstein	Research Analyst - Re: Economic Aspects.

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MR. BOYD: Your Lordship and members of the Royal Commission, Mr. Levesque and myself are here for the purpose of speaking to the submission which was made to the Royal Commission at your Lordship's request, and we have pleasure in complying with that request.

In the submission which we made, and of which copies were furnished, you will note that we thought the most useful contribution we could make would be to outline the factors which we ourselves considered as affecting our interests in relation to any railway that might be built in that area, though in the brief we have set out what we considered to be the relative factors to be considered, what our findings were, and the conclusions we have drawn from the findings.







What we propose to do is to start the brief by oral evidence from Major J. L. Charles, who will deal with the routes and costs and who will also show, with the permission of the Commission, some slides, if we may, to show the type of country, and in addition we will call Mr. Rotstein who will show the resources adjoining the various lines and the potential traffic which might be expected to result from the development. If the exigencies permit, our general manager, Mr. Cooper, will make an appearance.

Perhaps, sir, I should ask that the brief be marked as an exhibit.

THE CHAIRMAN: Yes. We have been doing that. That is one copy of it.

MR. BOYD: Yes. I would like to identify it for the transcript, that is all.

--- EXHIBIT NO. 4: Submission of Northern Alberta Railways Company.

MR. BOYD: Now, the facts in the brief result from a joint study made by the appropriate officers of both the Canadian National Railway and Canadian Pacific Railway. The witnesses in part will speak to facts of which they themselves have personal knowledge and in part to knowledge which they have had from the joint groups.

The brief itself, on pages 1 and 2, sets out the general basis on which we have proceeded





and details the factors to be considered in the construction of a railway.

In the assessment of the merits of alternative routes of a Railway to Great Slave Lake, certain factors are of critical importance.

The comparative construction and operating costs of the alternative routes are an important factor to be considered in the location of a new railway line. Due account must also be taken of another important factor, namely, the estimated initial and potential traffic which would accrue to the line. This in turn will depend on the resources and development potential along each route, and the availability of other forms of transportation. These factors will be examined separately and due weight will be given to all elements and factors and their comparative merits.

#### Position of the Northern Alberta Railways:

The Northern Alberta Railways in presenting this brief on the merits of alternative routes to Great Slave Lake has been guided by the principle that relative economic worth should determine the choice of routes. While other alternative routes were considered it was concluded that the only routes worthy of examination in detail were Grimshaw-Pine-Ile du Mort and Waterways-Pine Point-Ile du Mort.

In comparing the economic advantage of the alternative routes, the N.A.R. used as its basic





criteria the following factors:

- (a) Construction and Operating Costs: Each of the routes under consideration was compared as regards capital investment required, as well as annual costs which would be incurred in the operation of each line.
- (b) Resources and Development Potential: The development potential of each of the areas has been analysed to determine the route which is most attractive for potential traffic growth.
- (c) Present and Potential Traffic: In line with an analysis of resources and development potential, estimates of traffic were made to assess which route would offer the greater revenue traffic.
- (d) Availability of other forms of Transportation: Other forms of transportation in the area were examined to determine the extent of competition which would be faced by a new line, as well as the manner in which transportation in the area generally would be most improved as a result of the route selected.

Now, in reading that part I have outlined the way we have looked at the thing, and I would like now to call Major J. L. Charles as a witness to deal with the costs portion of the brief.







MAJOR J. L. CHARLES

BY MR. BOYD:

Q. Will you give your full name for the record?

A. John Leslie Charles.

Q. I wonder if you could just outline briefly what contact you have had with the location and construction of railways in your career, starting at whichever point you wish to start at, at the beginning or working back?

A. My first arrival in Alberta was in April 1910 on location, very much as a junior, at \$35.00 a month, between Calgary and Toefield, and I must say I thought I had come to paradise, and I haven't changed my opinion yet. We had a very instructive time there. I was fortunate enough to be under some excellent men, and I have a lot to be thankful for.

From there we went to the main line on Grand Trunk Pacific west of Jasper through to Prince George and from there to the Hudson Bay Railway in 1913, and that took me to the war years, where I went overseas and came back in 1919, and that was on a branch line of the Canadian National Railways on construction, on location, until 1934, when the depression put me up into the Hudson Bay Railway as Division Engineer on maintenance, and I more or less





continued until the second war, when I went back into the Army. After that I came out and was appointed the Principal Assistant Engineer for the western region and then Chief Engineer, and during those times there was not much construction or location, until 1951 when Sherrit-Gordon Mines wished to develop Lynn Lake and we located the line from Sherridan to Lynn Lake, and I was directly responsible for it. Then shortly afterwards Terrace to Kitimat, and, more recently, on the Hudson's Bay Railway to Thompson.





At the present time there is a railway from Optic Lake to Chisel Lake in northern Manitoba, and then to get out of this country last January I went to Liberia for the Liberian Mining Company. At the present time I am associated with some Vancouver engineers in studies being carried on in northern British Columbia.

During the war I was seconded to the United States Army Engineers on the location of a military railway from Prince George to Fairbanks, Alaska. Fortunately it was not necessary to commence that. The Japs were dislodged from the Aleutians, and it became unnecessary.

Q. You did mention there were a couple of wars in which you took part, but you forgot to mention you were awarded the D.S.O. in the first war?

A. Well, I do not think that affects the present matter.

Q. I gather since 1910 you have been closely connected with railway location, operation and construction?

A. Yes.

Q. Have you prepared the large map which we have had mounted, and which is blocking the view of the gentlemen of the Press, but I am afraid that cannot be avoided.







A. Yes.

Q. Perhaps we could have this map marked as an exhibit.

THE SECRETARY: It will be Exhibit 54A.

---EXHIBIT NO. 54A: Large topographical map.

MR. BOYD: Q. How would you describe the map? Is it a topographical map?

A. The map is made up of sections of the national topographical series with a scale of one inch to 16 miles. It shows the general country from north of Winnipeg clear through to Prince George. The central point shown there is Edmonton, and the Northern Alberta Railways, and the main line running up through to Grimshaw and the alternative line running to Waterways.

Q. The altitudes and other things are also shown on it?

A. Yes, the latitudes and longitudes are also shown on it. That is a general map. I worked on one of a larger scale, one inch to four miles, but that would have been rather unwieldy to show to the Commission.

Q. I might say we have two other copies prepared if they are of any value to the Commission. Now, I believe in leading to the preparation of this map which we have here at the present time you have relied on information you obtained as a result of a





reconnaissance survey you made in about 1957?

A. Yes.

Q. Would you just describe what you did starting at about that time, Major Charles?

A. I was instructed by the railway officials to make a reconnaissance of possible routes for a railway to Great Slave Lake, and in July, 1957, I commenced that work and carried it through in the field until August, and I made -- I will read the notes I have put down. My submission covers studies and a general reconnaissance by light aircraft, helicopter and automobile and boat, and by landings at some points to examine the physical features which would affect the selection of a location for a railway to Great Slave Lake. During 1957 and 1958 full reconnaissance was undertaken from 24th July to the 14th August, 1957, and during June, 1958. Therefore, the estimates of distances, elevations and costs are relatively approximate. However, they have been arrived at by the same methods in each case so they are comparative. To obtain closer estimates would require much more detailed surveys. I would like to emphasize that point. It was purely a reconnaissance -- a personal reconnaissance -- without any actual measurements on the ground except for some very approximate ones at some of the major bridge crossings.

Most of the observations were done from light aircraft, and were supplemented by landing





and examining the principal points, and by driving up the Mackenzie highway, but not all of it because it was in such a bad condition at that time. It was not very good for driving, but I drove down it part way from the north, and up it part way from the south. I went up the Peace River by boat, and so on, but it is purely and primarily a reconnaissance.

Q. But the same applies to both routes, and the same limitations are there?

A. Yes, the whole thing is done on the same basis.

Q Did you consider all the possible rail-heads for a commencement?

A. Well, we considered four. One from Athabasca which is the terminus of the Canadian National Railways, Athabasca subdivision; one from Waterways, the northerly terminus of the Northern Alberta Railways, Waterways subdivision; Grimshaw, on the Northern Alberta Railway, Peace River subdivision; and Fort St. John, the northerly terminus of the Pacific Great Eastern.

Q. What is your conclusion on Athabasca as a point of commencement -- a route north from Athabasca?

A. This railhead, on the Canadian National Railways' Athabasca subdivision, 98 miles northwesterly from Edmonton is located on the south bank of the Athabasca River, latitude 54 degrees 35 minutes.







A route northerly would require, within the first few miles, a major steel bridge on a concrete substructure to cross the Athabasca river. Then, for a distance of 180 miles, the route would be along the west slope of the river valley east of Calling Lake and Pelican Mountains to a point opposite the Northern Alberta Railway's railhead at Waterways.

Q. Before going further I wonder if you could show the Commission just where Athabasca is?

A. Well, Athabasca, gentlemen, is here, and the Athabasca River flows down to Waterways into Lake Athabasca. The Pelican Mountains are here, and they would force the route between the toe of the mountains and the river, and, therefore, the route would be more or less parallel to the existing railway for that distance. Therefore, it would not appear to be practical. There would not appear to be any reason for duplicating that line.

Q. Having reached that conclusion did you make any further detailed examination of that route?

A. No.

Q. What did you consider in the way of possible termini for this railway to Great Slave Lake?

A. As to a possible terminus, Hay River---

THE CHAIRMAN: Mr. Charles mentioned four routes. He has ruled out one already. Are you





going to ask him why he rules out Fort St. John?

MR. BOYD: Yes, in due course. I will do it now if you wish.

THE CHAIRMAN: Not now. I beg your pardon.

MR. CHARLES: You asked for the termini?

MR. BOYD: Q. Yes.

A. Well, Hay River, the terminal of the Mackenzie highway on Great Slave Lake, and Ile du Mort, commonly known as Deadman's Island, is presently a small ~~harbour~~ and a refuge for the protection of fishing and smaller craft. Those were the two termini considered. Another major factor considered was the location of Pine Point Mines which is fifty miles east of Hay River, and ten miles south of Ile du Mort.

Q. And those are indicated on the large map, Exhibit 54A?

A. Here is Hay River, fifty miles east and ten miles south.

Q. Perhaps we can deal with the question of the route from Fort St. John, Mr. Charles?

A. Well, in order to round out the study in general all possibilities were considered of what might be a practical route from Fort St. John northerly to a crossing of the Beaton River, and then up to the Doig River, and then the Chinchada River to a common point with the route that would go northerly from near Grimshaw near the Boyer River, but the





route from Fort St. John would be 65 miles longer than the one from Grimshaw, so we considered no further study was necessary on that.

Q. Would there be any heavy bridge crossings?

A. Yes, the crossing of the Beaton River would be a very serious matter.

Q. So for the reasons you have given you made no further detailed examination of the feasibility of Fort St. John?

A. No.

Q. That left, then, the route taking Grimshaw as a point of commencement and the route taking Waterways as a point of commencement?

A. That is right.

Q. Would you like to describe what you did and what you discovered with respect to the Grimshaw route?

A. Certainly. This is Grimshaw, northerly; this station is on the Northern Alberta Railways, Mile 65.3, Peace River subdivision. The turn-off point for a location for a railway to Great Slave Lake would be near Mile 60, and 327 miles northwest of Edmonton.

As this point of commencement is ten miles westerly from the Northern Alberta Railways' bridge over the Peace River no new crossing of this major river would be necessary for a railway line to







the north.

Q. I think on the map, Exhibit 54A, you have marked the mileage you have just referred to from Edmonton?

A. Yes, that is 327 miles to the proposed terminal.

Q. And it would show the relationship of the turn-off to the existing bridges there, also?

A. Yes.

Q. What would it be to Pine Point Mines?

A. By that route?

Q. Yes.

A. Four hundred and thirty miles, approximately.

Q. And to continue onto Ile du Mort?

A. Another ten miles.

Q. Would that be on the east or west side of the Hay River?

A. Well, there are two possibilities. One would be on the east side and not across the Hay River at all, but there are a number of tributary streams flowing into that that would need construction. It might pay to cross to the west side of the Hay River and go down a certain distance and then cross back again.

Q. This is one of the points where you need further survey on the ground?

A. That is right, a closer survey.





Q. Starting from what you have marked on the map, Exhibit 54A, at Mile zero, would you indicate to the Commission by sections, the Grimshaw route?

A. Yes, the first one is from Mile zero, near Grimshaw, to Mile 75 in the valley of the Boyer River. The general direction is due north, parallel to and some 12 miles to the west of the Peace River and towards the upper slopes of the valley near the Mackenzie highway. The general topography is rolling country with an elevation of from 1000 feet to 2000 feet. It is eroded by rivers flowing from the Clear Hills, Hawk Hills and Naylor Hills easterly into the Peace River.

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Six of these rivers, the Whitemud, Notikewin, Hotchkiss, Meikle, Keg and Boyer would have considerable influence on locating this section of the route. To develop not too steep gradients to descend to and ascend from practical crossings of these rivers, would require considerable deviation from a direct line.

Factors affecting cost of construction of this 175 mile section are: the value of property required for right-of-way; the clearing would be comparatively light, with open areas; grading materials would not be particularly difficult to handle, but quantities on account of the approaches to river crossings, would be comparatively heavy; bridging would be a major item.

Q. Could you indicate on the map this 175 mile section?

A. The Whitemud, Notikewin, Hotchkiss, Meikle, Keg and Boyer (indicating on map).

Q. The proposed route that you looked at is shown in dotted red lines, and the mileages from Grimshaw are shown also in red figures?

A. Yes.

Q. What about the next section, working north?

A. The next section, Mile 175, Boyer River Valley to Upper Hay River, Mile 240: this section is through the wide pass, summit elevation







1155, between Mt. Watt, elevation 2500, and Caribou Mountains, elevation 3300, then down the valley of the Meander River to its confluence with the Hay River.

The character of the country changes just north of Upper Hay River. To the south, there are cultivated lands and extensive areas of white poplar. The Indians at Upper Hay River keep pack horses and saddle horses for travel and hunting. To the north there is more boulder clay, sand and gravel, also limestone. There are larger swamps. The timber growth consists of more spruce and black poplar. It is not favourable to cross country travel with horses. Native routes are more confined to the rivers and lakes.

Q. Would the purchase of the right-of-way be an expensive item?

A. No; purchase of the right-of-way would not be an expensive item as there is little cultivated land, excepting small passages at the Indian settlements and the Hudson's Bay Company post at Upper Hay River.

Q. What about clearing?

A. Some areas have been burnt over, and clearing would not be a heavy item. Ground formation and soils would be comparatively favourable for grading, and quantities would not be heavy. Pile trestles and culverts would be sufficient for drainage.





There are surface indications of gravel deposits near Upper Hay River. I don't know whether they go down in extensively, but there are surface indications.

Q. That is section 175 to Mile 240: is there anything you want to indicate there?

A. Yes, right there (indicating on the map): Upper Hay River.

Q. Perhaps you could go on to the next section starting from Mile 240?

A. Yes. Upper Hay River, Mile 240 to Mile 355: in the valley of Hay River, between Caribou Mountains and Cameron Hills. As there are several tributary rivers flowing from Caribou Mountains westerly, in well eroded courses, to the Hay River, the opposite side of the Hay River, near the Mackenzie Highway, would be more favourable for construction than the east side. However, considering a direct route to Pine Point Mines and Ile du Mort, a route on the east side of the Hay River would avoid bridging this important river twice.

Q. That would be a fairly important item, would it?

A. Yes, but when more detailed surveys were gone into, it is a matter of economics - balance one against the other.

Timber growth is spruce, poplar and some jack pine; some parts have been burned over and there are open swamps and muskegs. Grading would be com-





paratively heavy on account of the valleys of tributary rivers to be crossed between Mile 250 and Mile 305, and also there are extensive swamps and muskegs by Rat Lake and Swan Lake. The principal tributary streams are the Melvin River, Roe River, Little Rapid Creek, Dizzy Creek and James Creek. Two steel bridges and six pile and frame trestles should be provided for.

Q. And that section you have just described ends at Mile 355, and you have something on the map there?

A. Yes, that is right.

Q. What about the part from Mile 355, then?

A. Mile 355 to Pine Point Mines and Ile du Mort, the line would turn off from the Hay River at about Mile 355, which is a few miles above Alexandra Falls, in a north-easterly direction across the Buffalo River, for a distance of approximately 75 miles, to Pine Point Mines. Between Hay River and Buffalo River there are extensive areas of swamp and muskeg. Near the Buffalo River and from there to Pine Point Mines, there are low ridges of limestone and gravel running in a direction more or less parallel to the shore of the Great Slave Lake. Muskegs occur between these ridges. Timber growth is light, mostly jack pine up to nine inches in diameter on the ridges, and spruce on the lower ground. Excepting to drain and cross the muskeg areas, grading would not be heavy; good materials - sand and gravel - are available.







Crossing of the Buffalo River would require a steel bridge on concrete sub-structure, up to 250 feet long.

Q. And that is about the end of the route you are going to describe?

A. Yes; 430 miles.

Q. Subject to the qualifications mentioned at the beginning what do you estimate the cost will be?

A. Well, the estimate of that is - and on to Ile du Mort - \$60,800,000.00. I would like to point out that since these estimates have been made - and, as I said before, they are very preliminary estimates - prices have advanced.

Q. This was 1957 when you made this figure?

A. Yes, 1957. For instance, the price of steel rails have gone up a good 10 per cent. Railway labour has gone up similarly, and when we come to talk, perhaps by the time this railway might be undertaken, I think we should be thinking in terms of up to \$70,000.00 - in general all-over terms.

Q. Due to the general increases?

A. Yes. All we can do at this time on the basis of my survey is to talk in very general terms, because it is not practical to make closer ones on the amount of work we have done at this time.

Q. In the light of the description of the Grimshaw route, perhaps you could summarize the principal physical features that you saw there?





A. Yes. The principal physical features controlling a railway location from near Grimshaw, northerly, to Great Slave Lake are: turn-off from the Northern Alberta Railways' Peace River Sub-division, elevation 1850; height of land, 2140, near Lake St. Germain, and that is just north of - -

Q. North of what, sir?

A. Right here (indicating on the map).  
To continue with the principal physical features: Crossings of six rivers - Whitemud, Notikewin, Hothkiss, Meikle, Keg and Boyer - flowing from Clear Hills and Naylor Hills easterly into the Peace River; summit, elevation 1155, between Peace River and Hay River - and that is in here (indicating) before you get to Upper Hay River.

Q. That is the summit?

A. Yes, that is the summit and the watershed. To continue: Rivers flowing from Caribou Mountains westerly into Hay River; possible sites to bridge Hay River; swamps and muskegs between Hay River and Buffalo River; Buffalo River crossing; possible terminus - Ile du Mort.

Relative factors affecting train operation: rise and fall would be fairly heavy between the turn-off point near Grimshaw and Upper Hay River, Mile 240, but from the latter there would be a gradual fall to Great Slave Lake. However, there are escarpments at Alexandra Falls and Louise Falls,





and some development of gradients would be necessary there. Maximum gradients would be not in excess of 0.75 per cent compensated. That would be an endeavour - to set that as a target.

Q. I am sure the Chairman knows what that means, but what does "compensated" mean?

A. "Compensated" means to compensate on a maximum gradient with a friction of the power wheels against the rails. For instance, say we had a one per cent grade on a tangent and then came to a 4 degree curve and still wanted to haul the same tonnage, you would compensate that - lessen it - by the amount of four one hundredths per degree, which would bring you down to a .84 grade for the length of the curve.

THE CHAIRMAN: The compensation applies to curves on the railways?

A. Yes, sir - if it is on the maximum gradient; otherwise, it doesn't matter. If the gradient is less than the maximum, you are not affecting the tonnage rating of the train.

THE CHAIRMAN: Does that mean you never have anything worse than .75?

A. That is what I would shoot for.

THE CHAIRMAN: That is apart from the valley of the Peace River itself?

A. On this there would be no crossing of the Peace River north of Grimshaw. On the Peace River crossing there would be much more.







MR. BOYD: Q. You are not speaking of the gradients on the existing N.A.R.?

A. No.

Q. What are those gradients?

A. Well, the crossing of the Peace River, there are 16 miles there where in one direction they are 2.4 per cent, and in the opposite direction 2.2 per cent, descending and ascending.





Q. You said that on the new line you would shoot for about 0.75. Is there any shooting you could do on this one?

A. The more I have heard about it, I don't think so. I mean, not at reasonable cost.

Q. You are mentioning curves. What would be the maximum rate of curves on this new line?

A. Well, we would endeavour not to exceed the rate of six degrees.

Q. Is that heavy or easy?

A. Oh, medium; it is not heavy.

Q. You have given us the route by which you proceed from Pine Point to Ile du Mort. How would that compare with a straight line, what is the deviation from a straight line?

A. I think about 21 per cent. That is a calculated straight line.

Q. Is there any further consideration of surveys on that line in addition to what you have suggested already?

A. Well, to obtain closer estimates of costs under modern methods, the way we would go about it would be to establish ground controls along the Mackenzie highway and into the route, convenient sideroads and then take aerial photographs and have contour maps prepared from those photographs and then project the railway on those maps, and one could then estimate reasonably closely the quantities





and bridging that would be required. It would still be a preliminary estimate, but it would be a much closer one.

THE CHAIRMAN: How much do you think it might cost to conduct such a survey, Major Charles?

A. Well, the Grimshaw one is close to the Mackenzie highway. A thousand dollars a mile ought to do it, I think.

THE CHAIRMAN: A thousand dollars a mile for such a survey?

A. I think so, sir.

THE CHAIRMAN: You have emphasized the fact that yours has been a preliminary survey?

A. Preliminary reconnaissance, not even a preliminary survey.

THE CHAIRMAN: And the cost you have estimated at \$60,800,000 plus the advance in prices?

A. Yes.

THE CHAIRMAN: Since that time I suppose there is some margin of error in there?

A. Oh, certainly.

THE CHAIRMAN: How much would you say, how much could it be?

A. I would hesitate to say that. On some lines I have built I have been very fortunate, and others not so fortunate. The other day I was saying to the boys: "Perhaps I had better clear out while the batting is good." I would be very







happy with ten per cent either way, up or down.

THE CHAIRMAN: Would it be correct to speak of a margin of error?

A. Yes, I think so.

THE CHAIRMAN: You would hope you would be within ten per cent?

A. I would hope I would not be more than ten per cent out either way, which would mean giving me twenty per cent. That is my hope, that it would be within twenty per cent.

THE CHAIRMAN: That is no more than \$66 million plus the advance of prices?

A. Yes.

THE CHAIRMAN: And with good luck it might be \$55 million?

A. I rather doubt that.

THE CHAIRMAN: Now, that is with good luck. May it be more than 15 per cent extra?

A. Higher?

THE CHAIRMAN: Yes.

A. I wouldn't like to say anything on that.

THE CHAIRMAN: Do you think you are reasonably safe in saying it would not be more than twenty per cent higher?

MR. BOYD: That is based on 1957 prices, sir.

THE CHAIRMAN: Yes. I am just staying





with this figure of \$60 million.

A. Well, it is asking a lot from such a survey. Yes, I would say that.

THE CHAIRMAN: You are fairly confident you would be within twenty per cent?

A. Yes, that it wouldn't be more than twenty per cent higher.

Now, if I may perhaps, it might be as well to clarify the basis of prices. For instance, these estimates are based on using secondhand 80-pound rails, untreated ties and pit-run ballast; that is ballast one finds convenient, not any crushed rock.

MR. BOYD: That would be comparable to quite a few existing branch lines?

A. Yes. The line we are building presently to Chisel Lake to take ore from there to Flin Flon -- all we can find there is sand.

THE CHAIRMAN: Do you find much gravel up and down the Grimshaw to Hay River route?

A. No; just indications up near Hay River. Of course, I didn't make any extensive prospecting for gravel; I just happened to see that. Any time I am travelling I am always looking for gravel, keep my eye open.

THE CHAIRMAN: It has been suggested that it wasn't thought there was any gravel along that route. If there was no gravel along the route, would that add substantially to building the railway?





A. Yes. Gravel is almost a necessity, and the cost of gravel is relative to the haul where one has to haul it from. If you increase the haul the price goes up per ton. It would depend on where one did have to haul it from. The known source -- there is some on Peace River; I don't know how much. There is some gravel there, but at this stage of investigations, we go on the assumption that we hope we will find some there. I mean, any preliminary reconnaissance like this I would conduct on that basis.

MR. BOYD: Unless there is anything else your lordship wishes to ask, I was about to ask the major to deal with the Waterways route in a similar way he has just described the Grimshaw route.

THE CHAIRMAN: We will have a short adjournment.

---Short recess.

THE CHAIRMAN: Gentlemen, we have been talking about adjourning at five-fifteen and coming back this evening, but those plans are very awkward for the members of the Commission. Would it be convenient if we were to meet tomorrow at nine o'clock instead of ten?

MR. BOYD: That is satisfactory to us, sir.

THE CHAIRMAN: And we can perhaps go a little later this afternoon and we won't have an







evening session tonight.

MR. BOYD: Quite satisfactory.

MR. FOUKS: Yes, Mr. Chairman.

MR. BOYD: I would like to go far enough this afternoon to get the slides in, at the risk of postponing some of the verbal evidence.

THE CHAIRMAN: Have you any idea how long these slides are likely to take?

MR. CHARLES: About thirty minutes.

MR. BOYD: Q. Now, Major Charles, you have dealt with the reconnaissance, a survey you made on the Grimshaw route. Would you proceed in the same way with the Waterways route, starting from Waterways as the southern terminus?

A. This railhead is the terminus of the Northern Alberta Railways, Waterways subdivision, near the confluence of the Clearwater River with the Athabasca River, latitude 56 degrees 40 feet, 306 miles northeasterly from Edmonton.

Extension of this railway, northerly, to Pine Point Mines Limited would be approximately 395 miles; from there it could be continued ten miles northerly to Ile du Mort, a total of 405 miles.

This route could be subdivided into six sections:

Waterways, Mile 0, to Royalite Plant Site, near Mildred Lake, Mile 26. At Fort McMurray, two miles north of Waterways, the route would cross from the east to the west of the Athabasca River,





then run near the west bank to the site of the Royalite plant which is being developed to separate oil from the bituminous sands.

The valley of the Athabasca River, between McMurray and Mildred Lake, averages two miles wide and 300 feet deep; the tributaries are also in deeply eroded valleys.

Limestone outcrops occur on the river banks, with numerous exposures of bituminous sands above. These sands are also exposed in the valleys of the tributary streams.

The Athabasca River, below McMurray, is from 1800 feet to 2600 feet wide, current fairly swift, comparatively shallow, with many low islands and sand bars.

Length of a projected railway route from Waterways to the Royalite Plant Site is approximately 26 miles. There are two major features to be considered:

(1) To cross from the east to the west bank of the Athabasca River, the best location for a bridge is just above the confluence with the Clearwater River near McMurray. Limestone is exposed on the east bank, and it would appear there would be reasonably good foundation conditions for concrete substructure for a steel bridge up to 1800 feet long; the superstructure would be thru-truss stands, and a temporary timber trestle, 700 feet





long, would be required at the west approach. An approximate estimate of cost to construct such a bridge is \$2,420,000.

(2) To grade a roadway by the bituminous sands cutbank, above Tar Island. This bank is 2000 feet long and 250 feet high; the toe is subject to direct erosion by the current of the Athabasca River.

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On account of the above controlling features, the most practical location for a railway would be in the valley at a safe elevation above high water. Some swamps would be encountered but most could be avoided. On the other hand, there are some low ridges of limestone which would be favourable. So, the overall grading would not be very heavy, excepting for 2000 feet by the above-mentioned cutbank. Good drainage would be particularly important. However, only one tributary stream, Poplar Creek, would require a pile trestle; culverts would be sufficient for other streams and water courses.

There are good stands of spruce, white poplar and black poplar up to 30 inches at the stump and 75 feet high in the valley, so clearing of the right-of-way would be fairly heavy. The availability of summer transport close by on the Athabasca River would facilitate delivery of construction materials, equipment, fuels and supplies.

Q. I think we have heard that there may be some change in the description of Royalite in that area, but you are dealing with a description of the plant at Mile 26?

A. Yes, near Mildred.

Q. Would it be convenient to start with the next section ---

THE CHAIRMAN: What is this change in the Royalite situation, Mr. Boyd?





MR. BOYD: I believe some other companies have come into the picture.

THE CHAIRMAN: Yes, but it is the plant that is known as the Royalite Plant?

MR. BOYD: Yes, that is the location we are dealing with.

MR. CHARLES: Royalite Plant Site near Mildred Lake, Mile 26, to the south end of Lake Claire, Mile 125. The route should pass between the Athabasca River and the Royalite Plant, also Horseshoe Lake, at an elevation of, say, 800 feet. Then, continue northerly near the west bank of the Athabasca River -- ascending to an elevation of Fort Mackay settlement, but not higher, and cross the Beaver River, Mackay River, Ells River, Tar River and Calumet River near their confluences with the Athabasca River (further upstream these tributaries are in deeply eroded valleys which would be comparatively costly to bridge)-- to a point five miles north of Bitumount.

Q. I do not think you have Bitumount marked on your map, have you?

A. Yes, Bitumount is here at about Mile 58.

Q. What about downstream from there?

A. Downstream from Bitumount the valley of the Athabasca widens and the slopes near the river are more gradual, but to the west, at the





26th base line, they rise to the summit of Birch Mountains, elevation 2,600 feet. This confines a railway route to be not far from the Athabasca river until it reaches the 27th base line, where it would turn northwesterly between Birch Mountains and Lake Claire.

After crossing the Calumet River the route should gradually ascend to an elevation of 100 to 150 feet above the Athabasca River. This section of the route, excepting for some swampy areas, would be on a favourable formation of clay, sandy clay and sand.

Timber growth is mixed poplar, spruce and jackpine. It is not dense, and jackpine predominates in the vicinity of the 27th base line.

One steel and eight pile and frame trestle bridges would be necessary to cross the tributaries to the Athabasca and also one to cross the McIvor River flowing into the south end of Lake Claire. Construction of this section would also be facilitated by the proximity of the Athabasca River for summer transportation.

Q. And can you deal with the next section north from Mile 125?

A. Yes. From Mile 125, west of Lake Claire, to the crossing of the Peace River between Peace Point and Boyer Rapids, Mile 225; this section is to the west of the vast delta area where the Athabasca River flows into Lake Athabasca, with Lake Claire adjoining it on the west, and the







confluence of the Peace River with the Slave River  
40 miles down from the outflow from Lake Athabasca.

The terrain around the west shore of Lake  
Claire is low and marshy, mostly open except for  
willows.

The Birch River flows from its source --  
Legend Lake in the Birch Mountains due west of  
Bitumount -- northwesterly to within fifty miles  
south of the Peace River, and then it flows northeaster-  
ly into Lake Claire. From the 5th meridian to Lake  
Claire the course of the Birch River, in general, is  
parallel to the Peace River.

After turning westerly from the valley of  
the Athabasca River a railway route would be near  
the toe of the slope of the Birch Mountains to a  
crossing of the Birch River, Mile 165, about 25 miles  
west of Lake Claire. In this area the timber growth  
is sparse, and there is evidence of considerable  
erosion of materials being washed from the slopes of  
Birch Mountains to the lower lands around Lake Claire.

Between the valley of the Birch River, Mile  
165, and the valley of the Peace River, Mile 225,  
there are no very marked changes in elevation. There  
are extensive swamps but by careful location, 50 to  
100 feet above the elevation of Lake Claire, and  
with good ditching it would not appear to be excep-  
tionally difficult for railway construction. There  
are some low, sandy ridges, with jackpine growing





near the south bank of the Peace River.

Many herds of buffalo -- Wood Buffalo Park officials advise the total number of animals is estimated up to 16,000 -- were observed in the open and semi-open areas near Lake Claire, and northerly through the Peace River valley for some 120 miles. These heavy animals have established trails and wallows throughout this range including some comparatively low marshy areas, and this would appear to indicate that, in parts, there is a reasonably firm bottom. Buffalo are very heavy animals, and I expect that where they can travel it would be reasonably firm and hard.

As the only points where this section could be served by summer transportation are the Athabasca River at the south end and the Peace River at the north, it would be advisable that materials, equipment, fuels and supplies be placed at intervals along the route during winter.

Further examination of conditions on the ground may show that it would be advisable to carry out forward drainage and just sufficient grading with off-track equipment to permit track laying through the swamp areas during the winter, and, the following summer, widen and raise the embankments by train-filling.

Q. That, incidentally, is a procedure which has been followed in the construction of ---





A. That was the method we used in going to Churchill.

Q. Yes. Did it turn out to be fairly satisfactory?

A. Entirely satisfactory.

Q. Did you have occasion to go back into this general area which you have been discussing at the time of high water?

A. Yes, I examined that country in June of 1958 after the -- well, the water had not receded from the high water experienced on the lower Peace and Athabasca when families were evacuated. One of the many reasons for that was that it was being suggested that we might have a route closer to Lake Athabasca -- about there (indicating on map) -- but my own opinion is that that would be quite impractical.

Q. And that was confirmed by what you saw in 1958?

A. Yes, I went over that in a helicopter.

Q. What about a site for a bridge across the Peace River at about this location, Mr. Charles?

A. Well, I have brought in -- perhaps it is not entirely relevant, but it is descriptive. To date three bridges have been constructed across the Upper Peace River. One is at Peace River town and is the Northern Alberta Railways' bridge. It consists of four deck plate girder spans, six deck truss girders and one thru-truss, and has a total length of







1,736 feet. Highway traffic is permitted to cross this railway bridge. The second is at Taylor Flats near Fort St. John. It is a suspension bridge with a total length of 2,130 feet. It carried the Alaska Highway. The third is just about the confluence with Pine River four miles upstream from Taylor Flats. It is a Pacific Great Eastern Railway bridge and has seven deck truss spans totalling 1,862 feet plus 1,400 feet of timber trestle on the north approach. The base of rail is 90 feet above water level.

The Upper Peace River and its tributaries have eroded wide valleys to depths of up to 800 feet. Locating, constructing and maintaining approaches to these bridges, on steep clay sidehills, can present difficult problems.

The valley of the Lower Peace River below Fort Vermillion widens, and the banks are not over 100 feet high and generally less than this, so locating approaches is not such a problem. However, the river is much wider. Excepting at Vermillion Chutes and at Boyer Rapids the channel meanders through alluvial flats. For a railway route north-erly from Waterways to Great Slave Lake the most practical location to bridge the Peace River would be near Boyer Rapids where the river has cut its channel through a formation of gypsum for a distance of eight miles. There are cliffs up to 100 feet high.





Q. Did you check whether there are two or more sites for this bridge?

A. Yes, two sites were viewed -- actually, there were more than that which were viewed in a general way, but two were gone into. One is at the head of Boyer Rapids. The actual river is approximately 2,900 feet wide, but is not deep, and the current is not dangerously rapid. However, the south approach would not be good on account of curvature, which it would be necessary to extend out onto the bridge.

The second is below the rapids. There is a straight reach of river between the east end of the gypsum cliffs and Peace Point. It is somewhat narrower than above the rapids, but it is deeper. The bridge would be entirely on a tangent and the approaches not particularly difficult. However, more investigation is necessary, preferably during winter, from the ice, to ascertain foundation conditions, both in the river and the adjacent banks.

Q. Would that involve any boring or what ---

A. That should be drilled. Our surveys have not advanced to that stage yet. We measured the width of the river and endeavoured to sound the depths of the water. The current was quite swift at the time as the water was fairly high, and we had trouble getting a weight to sink, but we got a reasonably close estimate of depth, I think. It was





30 to 40 feet below the rapids.

THE CHAIRMAN: Major Charles, is there any danger of its not being practical to build a bridge across one of those points?

A. I would not think so, but before a definite decision was made I would strongly recommend test drilling be done to ensure that. I examined the surface ground and the cliffs, and so on, but one does not know what is underneath, and certainly before we launch into any extensive expenditure we would want to ascertain those conditions.

THE CHAIRMAN: Is this a correct summary of what you have said; you said it is possible, but it would be very difficult and perhaps impractical?

A. I would not say impractical, but it is possible that one might run into more expense in regard to foundations.

THE CHAIRMAN: It is purely a question of how expensive it would be rather than whether or not it would be possible?

A. Yes.

THE CHAIRMAN: How much extra expense might be involved?

A. Well, we estimate the cost of the bridge on what limited data we do have as \$4,800,000. Well, if we took a figure 50 per cent higher than that it means another \$2,400,000.







THE CHAIRMAN: You feel pretty confident that that would do it?

A. I wouldn't like to say that even. That is a big margin, isn't it?

THE CHAIRMAN: Yes.

A. And not such a very big percentage in relation to the total length of the line.

MR. BOYD: Q. Would crossing at that point cause any deviation from the straight line of your route?

A. No, it is very fortunate; as one can see, it just happens to be right on a line like that (indicating).

Q. Your chief concern at that point is to satisfy yourself as to what additional cost you might incur due to unexpected foundation trouble?

A. Yes, I would certainly want to know that before involving any heavy expenditures.

THE CHAIRMAN: Would it be very expensive to do that work?

A. Oh, no; a few thousand dollars I should think - just reasonable preparatory work.

THE CHAIRMAN: And it should be done in the wintertime?

A. Well, it is better. Winter is often an ally to getting around country like that.

MR. BOYD: Q. I think you have already told the Chairman that your estimated cost was four





million eight for the bridge on that limited information. So, we will go on to the section north of Mile 225?

A. Yes. Crossing of the Peace River, Mile 225, to latitude 60 degrees, the north boundary of Alberta, Mile 300: this section of the route, northerly from Boyer Rapids and Peace Point, is through favourable country, mostly sandy clay, sand, gravel and boulders, with a good timber growth of jack pine, spruce and poplar up to 18 inches in diameter. There are no important rivers to be bridged. The general route is from 20 to 30 miles west of and parallel to the Slave River. The closest point to Fort Smith, the Administrative Centre for the Northwest Territories, would be 25 miles. To swing easterly, to be closer to the Slave River, would add considerable distance to the through line.

I will point that out across here (indicating) and Fort Smith is over on the river there. If you swung it round there, you would have considerable distance.

THE CHAIRMAN: You don't recommend going within 20 miles of Fort Smith?

A. Well, that is my route for the through route - 20 to 25 miles.

MR. BOYD: Q. As far as construction is concerned in that area, is there any roadway there which would be of some assistance?





A. Yes, there is a fair trail for the operation of trucks between Peace Point and Fort Smith. This would be of assistance for access during construction. Then there are passes close to Pine Lake. The water is beautifully clear, with sandy shores and good stands of jack pine, poplar and spruce. That is the summer resort of the people of Fort Smith; a lovely lake. I had to put that in because things like that appeal to me.

THE CHAIRMAN: How large is the lake?

A. Oh, it would be two or three miles long and half a mile wide. It is just a little gem, and the only one in that country that is a gem.

COMMISSIONER THOMPSON: There are no flies around?

A. Oh, well, that is another matter.

MR. BOYD: Could you deal with the next section from Mile 300 north?

A. Yes.

THE CHAIRMAN: Would you propose going into Bell Rock Harbour?

A. No, sir.

Q. How close to that would you come?

A. Well, it would be 25 miles from that.

The Rapids between Fitzgerald and Fort Smith - that forms an escarpment, and from a straight railway point of view, on construction and location, I would endeavour to keep above that escarpment, and Bell Rock is







below it. If one went into Bell Rock one would have to ascend again out of the flats of the Slave River on to the escarpment towards Pine Point. It is not impossible, but I was endeavouring to obtain the shortest most practical route to Pine Point Mines and Ile du Mort.

THE CHAIRMAN: What drop is there there?

A. Oh, I expect 100 feet, from the banks there, yes, between the Fort Smith Town and the river below Fort Smith. It would be somewhere round that; it is quite appreciable. I remember that very well because we landed on the river and got a taxi to take us up to the hotel in Fort Smith, and it is not very far, and he charged us \$2.50.

MR. BOYD: That part of the reconnaissance estimate is absolutely exact.

THE CHAIRMAN: Would there be a serious problem about getting access from the railroad to Bell Rock Harbour?

A. No, I don't think so. One would have to develop down that side hill.

THE CHAIRMAN: That would be a spur line?

A. Yes, it would be a spur line from the throughline.

THE CHAIRMAN: If the throughline were to go far enough east to touch Fort Smith or Bell Rock Harbour, I suppose that would add some considerable distance to the overall route?





A. Yes.

Q. Would it add 50 miles - 25 miles each way?

A. Well, it would angle across: oh, probably, you might say 40 miles. You wouldn't go out at right angles. It would probably be cheaper to build a throughline to the spur, but I would think, as far as Fort Smith goes, that it is just a case of servicing the town, and a good road would do that to the station opposite.

MR. BOYD: Q. What do you have to say about the section going north from Mile 300?

A. South boundary of the Northwest Territories, Mile 300, northwesterly to Pine Point Mines, Mile 395: five miles north of the sixtieth parallel of latitude, the route would cross the Little Buffalo River, then run a few miles to the west of this river, to a crossing of the Nyarling River, Mile 360, a tributary, which is also the north boundary of Wood Buffalo Park. Much of the basic formation of this area is of limestone; many exposures, minor escarpments, including a falls on the Little Buffalo River, and angular sink-holes occur.

Perhaps I had better enlarge on those sink-holes. I believe they are caused through the limestone being dissolved and then the sink-holes go right straight down. There may be some as large as this room, and some larger. There are a lot of them all





over the country, and you can see them in the aerial photographs quite plainly. One would avoid as many as possible, but I don't think crossing some of them would be too serious. I made inquiries about them and was assured of that to that extent. Otherwise, it is very favourable country - dry; but, they are quite a feature in that country right from Peace Point right through to where I have mentioned - the Little Buffalo River, all through there, and they are quite a striking formation.

The general course of the Little Buffalo River is parallel to, and 10 to 15 miles westerly from, the Slave River. Between these two rivers there are extensive low flats and saline areas.

There are large salt flats at the foot of the escarpment, and I have one or two slides that would illustrate that.

Comparatively good timber, for these latitudes, continues through to near the Nyarling River. It continues north surprisingly well. The Nyarling River is here (indicating), almost to Great Slave Lake.

From Mile 345, a few miles southeast of the crossing of Bear Creek, northwesterly across the Nyarling River to Mile 380, there are vast areas of swamps and muskeg. Extensive drainage would be necessary in connection with grading through these swamps and muskegs. Perma-frost should be expected.

By the way, that is in the general area







where the Whooping Cranes nest, and I am requested to keep away from them.

Q. Can you assure the Royal Commission that this line will not disturb the Whooping Cranes?

A. Yes, I have got an official letter about that, and I undertook to assure our people that we would not do anything we should not do.

After excavation of off-take ditches and initial grading, it would probably be advisable to lay track during winter, on frozen ground, and lift it the following summer by train-filling. Those are serious swamps; there is no question about that, but the ones I mentioned going across from the Hay River to Pine Point Mines are serious too. That is quite a serious piece of country.





THE CHAIRMAN: Do those sets of swamps - do you think it is possible that either one of them may be practical?

A. Oh, I don't think so. I think one could find - the one that I am describing now, I went over it with a helicopter and landed and probed down with a small iron bar and I think I counted it three or four feet down, and by careful examination I think you could get on a little higher ground; even a couple of feet in country like that makes a big difference, to support it. On either route one is going to encounter that condition, no matter which way one goes in order to get to Pine Point Mines.

THE CHAIRMAN: This difficulty you are satisfied can be overcome?

A. I think so.

MR. BOYD: Q. Maybe you have slides showing that particular feature, too?

A. Yes. That slide might be a little startling, to see that.

From Mile 380 to Pine Point Mines, Mile 395, there are low ridges of limestone and gravel, somewhat parallel to the lake shore, with swamps in the lower areas. There is a fair timber growth, mostly jack-pine up to nine inches in diameter, in this area. Grading would not be difficult.

Several bridges would be required, including crossings of Little Buffalo River and the





Nyarling River, but no particularly long ones, between Mile 300 and Mile 395.

Access would be the principal problem in construction of this section; it would be essential to place equipment, materials, supplies and fuels during the winter season. However, the south end would be accessible by a trail from the Slave River, at Bell Rock, to the Little Buffalo River; the north end could be reached by a good trail from Great Slave Lake, at Dawson Landing to Pine Point Mines. One can drive a jeep there; it is a little nice trail for nine miles. It is longer, it is 18 miles by trail.

From Pine Point Mines a railway could be extended to the south shore of Great Slave Lake, where development of a harbour is stated to be practicable. That is what I have been told; that is the only reason I give that. I don't know what it would cost or what it involved; I have just been told that.

Q. None of your costs include anything with the harbour at all?

A. No.

To Ile du Mort, a distance of approximately ten miles northerly, it would be necessary to descend 200 feet from the elevation of the mine and townsite along the slopes of low ridges, probably former lake shores, to flat land which extends







inland from Great Slave Lake, for a distance of one mile. This "flat" could be raised, by filling, to a suitable elevation for a railway terminus.

Ile du Mort is a low island of gravel and boulders with an area of some 55 acres. It is separated from the mainland by shallow grassy water; the formation has the appearance of a peninsular.

There is presently a small dredged area, known as the Harbour of Refuge, between the east end of the island and the mainland, for protection of fishing and other small craft plying between Hay River and Fort Resolution.

Q. That comes to the end of your sectional description of the Waterways route?

A. Yes.

Q. Would you like to summarize that? Do you think you could summarize the Grimshaw route?

A. Yes. The distance from the Northern Alberta Railways' terminus at Waterways to Pine Point Mines would be approximately 395 miles. This could be extended to a possible harbour site on the south shore of Great Slave Lake, either ten miles northerly to Ile du Mort or an alternative of 60 miles westerly to Hay River.

There are six major physical features:

(1) The Athabasca River, to be bridged near McMurray.

(2) Bituminous sands, cut-banks, west





bank of the Athabasca River, above Tar Island.

Grade to be excavated by these banks and to be protected.

(3) Swamps west of Lake Clare.

(4) Peace River, to be bridged between Boyer Rapids and Peace Point.

(5) Swamps southeast and northwest of the Nyarling River.

(6) Ile du Mort - possible harbour site and railway terminus.

Q. What about factors affecting train operations?

A. The relative factors affecting train operations are "rise and fall". This route, in general, is parallel to and west of the Athabasca River and the Slave River, but to the east of Birch Mountains and Caribou Mountains there is no great difference in elevation, the principal points being: Athabasca River near McMurray, low water 792, high water 822, grade for base of rail on bridge, say 835. Lake Clare, water level 699. Peace River at Boyer Rapids 734, grade for base of rail on bridge, say 810. General elevation near Pine Lake about 850. Pine Point Mines and townsite 730. Great Slave Lake, "flat" near Ile du Mort, 525.

Therefore, "rise and fall" would not be heavy.

Maximum gradient - we would endeavour to





obtain not over 0.75 per cent compensated, subject to economics in relation to capital costs for construction.

Curvature - total angles would not be heavy and rate of curve would not exceed 6 degrees.

THE CHAIRMAN: Those are the same figures, are they not, as for the other?

A. Yes, I would shoot for the same standards.

Distance - estimated length of this route from Waterways via Pine Point Mines to Ile du Mort is 405 miles. It is 25 per cent longer than a direct line.

Preliminary estimates of cost to construct this line: Waterways to Pine Point Mines, \$60,250,000; extended to Ile du Mort and yards \$2,250,000, total \$62,500,000.

MR. BOYD: That would include a bit of a yard?

A. Yes, a minimum, what would be normal at the end of a railway or terminal division along a railway, but nothing whatsoever as harbour work.

MR. BOYD: That, sir, comes to a point where we could quite easily fit in the slides now and return to the text that Major Charles has. We have our projectionist here, in case we are not going to sit tonight.

THE CHAIRMAN: Very well. We will recess.

--- A short recess







---At this point, a screen and a projector having been set up, coloured photographs of the area under consideration were shown to the Commission.

MR. BOYD: As to this portion of the evidence I have no precedent as to what counsel is supposed to do so I will just sit down and let the witness do the talking.

MR. CHARLES: That is Peace River Town looking towards the confluence of the Smoky.

That is the Northern Alberta Railways' bridge at Peace River.

That is farming land just north of Grimshaw, looking easterly.

That is the Town of Manning.

That is the Boyer River valley looking towards Fort Vermilion.

That is just west of Fort Vermilion. You can see the Peace River in the distance.

That is Fort Vermilion on the Peace River, and the Vermilion Experimental Station is there.

That is the Upper Hay River with the Meander River coming in on the left. You can see the Hudson's Bay Post and the Mission.

That is another view of the Upper Hay River. You can see the highway going by on the left hand side -- the Mackenzie highway.

That is an old-timer on the Upper Hay River. He had an old muzzle-loading shotgun and a powder





horn all complete.

There are some nice things on the Upper Hay River.

That is the highway bridge over the Hay River.

That is the Alexander Falls, with the Mackenzie highway on the right hand side. They are 105 feet high, and are limestone.

That is the brink of the falls.

That is looking over the falls -- over the brink. You can see the high limestone banks or cliffs.

That is another one showing the brink.

Those are the Louise Falls below the Alexander Falls.

That gives a very good view of the country over to the east. It is low flat country.

There is another view of Louise Falls.

That is the Hay River with its high cliffs.

That is the Hay River looking out to Great Slave Lake with the Mackenzie highway in the foreground.

That is another view of the mouth of the Hay River. The docks are in the foreground on the left.

That is Ile du Mort. You can see the reef in the foreground, and I am advised that that is where it is proposed to build a breakwater, and





they propose to dredge in the area between it and the mainland. Harbour of Refuge is in the area that is more or less square or rectangular on the far side of the peninsula. That is being dredged out, and the reason it is bare on the island is because it is where equipment has been working around.

That is typical of the south shore of Great Slave Lake. It is a very dangerous shore; it is shallow, and in a storm there is almost nowhere to take refuge.

That is another view of the south shore of Great Slave Lake a little west of Ile du Mort near Paulett Island. We landed there and thought we were all alone. The pilot is out there in a T-shirt and so is myself, and down the bank came a prospector and his little son, eight years old. He was a real little man, that boy.

That is the trail from Dawson Landing on Great Slave Lake to Pine Point Mines on one of the low ridges.

That is a discovery post at Pine Point Mines -- the original discovery.

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That shows surface exposure of ore.

That is the old head frame, I guess you would call that.

That is the exploratory head frame.

Those are officials' houses -- mine houses.

That is Fort Providence on the Mackenzie River, and it is a most impressive river.

That is it too -- a very swift current and clear, crystal water then.

THE CHAIRMAN: How wide is it?

A. The channel there would be close on a mile wide.

That is Yellowknife.

That is Fort Resolution.

That is the wharf at Fort Resolution and a Hudson's Bay tug and barge.

That is the Athabasca River a few miles upstream from Waterways, showing the rapids. Unfortunately, I took some pictures of the Athabasca and the Peace in black and white, and I haven't got slides of those.

Those are the bituminous banks just above Tar Island about 25 miles downstream-- that is on the west bank.

That is near the same spot: Tar Island is downstream.

Those are the cutbanks I described that one would have to excavate into and then protect the





railway against the river. I don't think it would be too difficult.

That is a tug and barges on the Athabasca River near the airport.

That is the swamp lands west of Lake Claire, and a herd of buffalo.

That is the same vicinity -- a little bit of a creek. The buffalo stampeded across the creek, and those buffalo can really move when you get down low over them.

There are more buffalo and that shows the country just south of the Peace River at Peace Point. It is quite nice country there.

That is Pine Lake, the summer resort for Fort Smith.

That is the Denny Logging Company plant that they were erecting in 1957 near Fort Fitzgerald on the Slave River.

That is a monument to the best woodcutter in the north on the portage between Fitzgerald and Smith. I forget his name, but he was the champion woodcutter on the steamboats.

Those are the rapids between Fitzgerald and Smith.

That is another view of the rapids. There is a series of rapids there.

That is the salt flats at the foot of the escarpment opposite Fort Smith -- a very strange





piece of country. We landed there in a helicopter, and where they were dry they seemed to be firm and would support you, but where there was water they were quite unstable.

That is another view.

That is the Little Buffalo River. You will remember I mentioned outcroppings and escarpments of limestone. That is in the Northwest Territories.

There are the swamps -- a forbidding piece of country.

That is another view of them.

That is the suspension bridge at Taylor Flats on the Alaska Highway, and the gas pipe line over the Peace River. The gas gathering company plant is shown on the far shore.

That is the Pacific Great Eastern bridge under construction on the Peace River about four miles upstream from Pine River.

That is another view and it shows the high trestle approach on the north bank and the grade going up the cutbank, climbing up to Fort St. John.

That is the Beatton River near Fort St. John, and that is a terrific valley. It is typical of the tributaries into the Peace, although I believe it is one of the most formidable of them.

THE CHAIRMAN: How deep is that valley?

A. About 800 feet.







That is another view of it with the highway bridge in the lower left hand corner.

That is higher up where one might contemplate crossing.

That is all.

THE CHAIRMAN: Thank you very much.

A. I would like to show you the ordinary photographs of the Peace River, if I may.

---The Commission studied further photographs produced by the witness.

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THE CHAIRMAN: I would like to ask Major Charles a few questions. Have you any more to ask him?

MR. BOYD: Yes, we have.

Q. Major, you have described by sections the two routes, and you have also shown photographs and coloured slides to indicate the kind of country. This was referring to your reconnaissance made in 1957, and what recommendations did you come up with at that time?

A. Well, I made an overall summary which I perhaps should read, and it repeats somewhat.

Estimates of costs submitted are based upon preliminary reconnaissance, mostly from aircraft, so they are relatively approximate. They are comparative. Railway prices are used. Track to be laid with 80-pound part-worn rail on untreated ties and pit run ballast.

Unit prices used are on the assumption that construction would be carried out on a progressive program over a period of five years. The project could be carried out in less time, but costs should be expected to be relatively higher. The most economic construction, as a rule, is an orderly program, without forcing the rate of construction. If you force the rate of construction, which would become necessary in time of war, and so on, your prices go up. If you ask people to do things that





you normally wouldn't you have to pay for it. I think five years should be the time taken to that in an orderly manner.

Q. Would that five-year period include the time required for any surveys?

A. I think 12 to 18 months would be necessary for surveys to permit commencement of construction.

Q. That is in addition to the five years?

A. Yes, unless there was some reason to push it. During the war, from Prince George to Fairbanks it was 1500 miles between the end of May and the end of September; but the cost didn't matter; we worked under pressure, and I was told if I didn't do it somebody else would. I was told that very plainly. I don't believe in doing these things if one can avoid it; if one can make an orderly program, the better.

THE CHAIRMAN: Q. The remainder of the five-year term would be for construction?

A. You would want 12 months, anyway, I would think, if it was decided to make surveys of both routes and compare them in detail, and that would only be preliminary surveys, to make a decision, and then one could commence the actual detailed survey and commence the program then.

THE CHAIRMAN: Q. The 12 months is part of the period?







A. No, the 12 months would be first. It is six years all told. I may be over-cautious on that, but that would be, in my opinion, the most economic procedure; put it that way. If for some business reasons, the matter of opening up a mine to get revenue, it could be pushed, but you certainly wouldn't push it to four years.

MR. BOYD: Q. Do you expect that any shortening would increase the cost?

A. Yes, it would.

THE CHAIRMAN: Major Charles, I think you said that you think there will be a 12-month period for making your survey before reaching a conclusion?

A. I will supplement that a little afterwards, sir.

From Waterways to Ile du Mort - this is just repeating - a distance of 405 miles and a preliminary estimate of cost is \$62,500,000. This is the shortest route to Great Slave Lake, via Pine Point Mines, but it is necessary to bridge the Athabasca and Peace Rivers.

From near Grimshaw to Ile du Mort via Pine Point Mines is approximately 440 miles, and the estimated cost is \$60,800,000. Although this is 35 miles longer than the alternative from Waterways, it is not necessary to bridge the Athabasca and Peace Rivers. The latter, together with the convenience of access by the Mackenzie Highway, accounts for this





estimate being the lower by \$1,700,000.

However, capitalization of the cost of annual maintenance of the additional main track would be \$1,300,000. And, more train miles would result in higher operating costs for equal tonnage.

Now, I took an old figure for the maintenance. This morning I called at Mr. Cooper's office and found that the average annual cost of maintenance per mile on his railway is about \$2,800.00.

MR. BOYD: Q. What follows from that?

A. Well, that brings them almost equal.

Considering capital and annual expenditures together, over-all costs would be very similar for either a railway from Waterways or from Grimshaw to Ile du Mort. They would be very similar. We have one being \$62,500,000.00 and the other \$60,800,000, plus the capitalization of the maintenance, which would bring them, on this basis, almost equal. I mean, so near equal that these estimates couldn't be any closer. When we talk on the basis of these estimates we assume they are equal.

Now, there are two alternatives have been considered: (1) From Grimshaw to Hay River and a branch to Pine Point Mines. Distance - from the northern Alberta Railways directly to Great Slave Lake, 395 miles; preliminary estimate of costs, \$54,800,000.00; together with a branch to Pine Point Mines, 75 miles, the total would be 470 miles and





preliminary estimate \$65,900,000.00.

Further surveys may show a shorter branch line to be practicable; if so, the total for main line and branch might be reduced to, say, \$64,000,000.

Maintenance, track miles, and operation, train miles, would be greater than on either of the other two proposals.

Also, operation of a main line and a branch line would not be so efficient as a through main line to Pine Point Mines and Great Slave Lake. That adds, the stub branch line adds to the operating costs.

Q. This alternative, I believe, is shown on the map?

A. Yes, through line to Hay River and a branch line to Pine Point Mines.

(2) From Waterways to Pine Point Mines and to Hay River, a difference of approximately 60 miles westerly to Hay River. For the easterly 20 miles there would be comparatively favourable ground, partly on low ridges of sand, gravel and limestone, with fair timber growth of jack-pine and spruce up to 20 feet high, and some muskeg areas to the Buffalo River. Between the Buffalo River and Hay River, 30 miles, there are extensive areas of swamps and muskegs.

To construct a railway between Pine Point Mines and the existing settlement and wharves at Hay River would require construction of steel bridges to cross two rivers - the Buffalo River, 250 feet wide,







and the Hay River, 600 feet wide.

Estimated cost of such a sectional railway, including initial terminus yard, but excluding wharves, etc. would be approximately \$10,650,000.00.

An alternative to constructing a railway bridge across the Hay River to the existing wharves would be to construct a highway bridge and develop wharves on the east bank of the river.

Waterways to Pine Point Mines, 395 miles; preliminary estimate, \$60,250,000.00. Pine Point Mines to Hay River, 60 miles, \$10,650,000.00, total 455 miles - \$70,900,000.00.

Then we have comparison of operating features. Distances: Edmonton via Waterways to Ile du Mort, 711 miles; Edmonton via Grimshaw to Ile du Mort, 767 miles.

Maximum rate of gradient: northerly from either Waterways or from near Grimshaw one would hope to obtain 0.75 per cent compensated. Edmonton to Waterways: 1 per cent against northward, and 2 per cent against southward ascending from Waterways, 3 miles only. Edmonton to Grimshaw: 2.20 per cent against northward, and 2.40 per cent against southward, crossing the valley of the Peace River, a distance of 16 miles.

Comparison of the preliminary estimates of construction costs for the two principal routes - Grimshaw to Pine Point Mines and Ile du Mort; Water-





ways to Pine Point Mines and Ile du Mort - when considered together with maintenance no decisive distances are indicated; they are almost equal. I couldn't say one is much dearer than the other. I believe they are very similar.

Therefore it was my recommendation that my report, that is the railway, should be considered in conjunction with the results of surveys of natural resources being reported on by officers of the Departments of Research and Development, Canadian Pacific Railway and Canadian National Railways, and their estimates of the traffic, operating costs and revenues to be expected to accrue respectively; and, also, with reports of specialists on the relative harbour sites on the south shore of Great Slave Lake. Whether anything has been done on that, I don't know.

Q. You haven't had any further information on that?

A. No. Now, in conclusion, I haven't heard the traffic, I haven't gone into it.





If results of overall studies comprising construction costs, maintenance, operation and potential revenues and future development possibilities, do not clearly indicate one route to be of greater value than the others, I further recommend that surveys be undertaken to establish ground control points necessary for aerial photographs and photogrammetry and to plot contour maps so that actual projected locations may be made northerly from both Grimshaw and Waterways, and closer estimates of construction costs to be obtained in order that a sound practical decision be made.

Q. I think, Major Charles, you have pretty well covered everything that was in the brief, Exhibit 54, under the heading of "Routes and Costs", so I am not going to repeat that little bit, but I would like to bring your attention to the conclusions which are contained on pages 23 and 24 of the brief, which you have read, I believe ?

A. Yes.

Q. The conclusions on page 23 read in this way:

If a railway is to be built to Pine Point and Ile du Mort on Great Slave Lake, the Northern Alberta Railways conclude that it should be constructed from Waterways for the following reasons:

(a) Railway construction costs based on a preliminary reconnaissance are considered to be







roughly equal on each route.

That is your conclusion?

A. Yes.

Q. (b) The Waterways route would have better grades, shorter route mileage and greater volume of traffic than the Grimshaw route.

Now, you have spoken about grades?

A. Yes, grades and route mileages.

Q. Have you any information given to you about studies made on the volumes and studies of traffic?

A. I have read what you have there, but I have not gone into it in detail. I have not made a study of it.

Q. But so far as your evidence is concerned you confirm the better grades and shorter route mileage?

A. Yes, definitely.

Q. Then, (e) Operating costs per unit of traffic would be less on the Waterways route.

Would you agree with that conclusion?

A. I would expect them to be on account of the mileage being shorter.

Q. Before I let you go, Major Charles, is there anything -- you mentioned the Hudson's Bay Railway, and the railway to Lynn Lake. Is there anything that occurs to you from that experience that is appropriate to the present matter?





A. Yes. The Hudson's Bay Railway from Le Pas to Churchill, southerly 300 miles from Le Pas or just north of Le Pas to south of Gillam, north of Ilford, is through the Canadian Shield country. Apparently, as a result of that God's Lake Mining, and gold mines to the east, were opened up. They are closed today, but they were opened up, and that railway provides traffic from Ilford by tractor train in the winter. The present development at Thompson, 30 miles west of Sipiwisk, mileage 200 on the Hudson's Bay Railway -- I would not expect it would have been justified to build those 30 miles if the 200 miles had not been there, and I would not have expected the development to take place which is going on at Thompson.

Q. That is a pretty big investment by itself.

A. Yes, there is a power plant there and a city of 8,000 persons is planned there. It is a tremendous undertaking of International Nickel. We finished that two years ago. The Hudson's Bay Mining and Smelting Company at Flin Flon -- a branch line was built 80 miles from Le Pas, and if there had not been a line at Le Pas I do not suppose Flin Flon would have come into being. Presently we are building a line from Sherridon, which is on the way to Lynn Lake from Optic Lake to Chisel Lake, to haul ore from the Hudson's Bay





Mining and Smelting property at Chisel Lake to their smelter at Flin Flon.

Sherridon sub. was built from Cranberry Portage to open up the Sherritt-Gordon mine -- that is copper, mostly -- and that was worked out after they got the full tonnage they expected. They got everything, and a little more than they expected, and then they were fortunate to discover Lynn Lake 150 miles to the north, and we extended the railway to them.

Q. A little extra bonus which was not expected?

A. Well, we had to build it another 150 miles, but that is going ahead. Lynn Lake is a town of about 2,000 or 2,500 people. So, certainly it would appear that a line through potential mining country perhaps will bring about traffic in the future.

MR. BOYD: Thank you very much, Mr. Charles.

THE CHAIRMAN: Mr. Charles, we would like to ask you a few questions, if you do not mind.

A. Yes.

COMMISSIONER GAINER: Major Charles, can you tell us, without going into it in detail -- do you remember roughly what mileage of train fill you have calculated for each route in the low land?

A. I think about 35,000 cubic yards a mile.

COMMISSIONER GAINER: But what I meant







was: How many miles on each route?

A. I have got the details of it.

COMMISSIONER GAINER: Perhaps I could put this more generally ---

A. I think probably the best thing is to give you the overall figures on the different mileages from Waterways to Pine Point clearing. 1400 acres at \$200 an acre; 2,040 acres at \$250; 2,010 acres at \$300/ The reason for that is the different size of the timber and the different distances from access. That accounts for those different prices. Then, grubbing 810 acres at \$300 an acre; grading limestone, 35,000 cubic yards at \$2; 300,000 cubic yards at \$2.50; other materials, 550,000 cubic yards at 75 cents; 3,265,000 cubic yards at 90 cents; 5,650,000 cubic yards at 95 cents; 3,100,000 cubic yards at \$1. Frozen material, 250,000 cubic yards at \$2.30; 500,000 yards at \$2.50. Extra haul, 1,425,000 yards at 40 cents a cubic yard-mile; train fill, 850,000 yards at \$1.50.

COMMISSIONER GAINER: That last figure was 850,000, was it?

A. That is just train fill. That is in addition to this other.

COMMISSIONER GAINER: I am concerned, just as a matter of interest, with mileage for the muskeg and swamp country, of which there is some on both





sides. This would be generally more extensive on the east?

A. Yes, somewhat more extensive.

COMMISSIONER GAINER: And all of that is, of course, included in your aggregate estimate?

A. Yes, that is what it is based on, you see. The difference in price for the grading -- the reason for that is that as one gets further away from the base of operations it costs more money. From Peace Point to outside Fort Smith it is beautiful country and easy country. There is a trail over which you can drive a truck quite nicely. It is nice country to work in. There are nice trees -- it is nice country.

COMMISSIONER GAINER: Yes, thank you.

A. And this country in here -- in there there is a lot of sand; miles of sand. (Indicating on map). On this side of the Athabasca River there are miles of sand dunes across there; there are ridges of sand. Embarras Airfield is on sand too, and is high and dry above the river.

THE CHAIRMAN: Major Charles, at the bottom of page 23 of the brief the conclusions are set out, and one of the reasons given by the railway company for advocating the Waterways route is this:

"Operating costs per unit of traffic would be less on the Waterways route."





I think you expressed the opinion that that would be so because the mileage is shorter?

A. Yes.

THE CHAIRMAN: Can you tell us how much less the operating costs per unit of traffic would be?

A. Not in money. Every train in each direction would travel 35 miles less in each direction. In making one trip up and one trip back you would save 70 train-miles. I would not care to say what the value of that is because there are people who know it better than I do.

THE CHAIRMAN: I suppose we should ask Mr. Cooper about that?

A. I think he would have by far the best knowledge of that.

THE CHAIRMAN: You did not mention Providence as a possible terminus for the railroad?

A. No.

THE CHAIRMAN: That has been mentioned by people in Yellowknife. What would you say about that?

A. Well, if you speak of Providence on the north side of the Mackenzie River it would mean crossing the Mackenzie River, and I would not care to say what it would cost to bridge that, but it would be a tremendous sum of money. Also, you would considerably increase the distance. You would increase it by 80 miles; I would say from 80 to 100







miles.

THE CHAIRMAN: This morning Mr. Jewitt explained to us that if a base metal mine were put by the side of Great Slave Lake the railway would have to be built up to it. Would it be feasible to build a railway from Pine Point straight east to give service to any mines that might be developed over there?

A. Well, I would think -- it would depend almost entirely on where that mine happened to be. The most favourable point, I would think, across the Slave River would be at the rapids near Fort Smith. I might be off on that, but ---

THE CHAIRMAN: Can I just show you what I mean? Suppose there was a find anywhere in here. Would it be feasible to build a railway -- supposing a railway were built along this route, would it be feasible to extend the railway over to here?

A. It would be quite difficult to cross here.

THE CHAIRMAN: When you say "quite difficult", is it more difficult to get across there than it is to go through the area from Peace Point?

A. Yes, you have to cross the Slave River.

THE CHAIRMAN: Is it a very difficult crossing?

A. I would expect the foundations to be deep, but apart from that it is hard to say.

THE CHAIRMAN: Other than the crossing





of the river is there anything else?

A. Other than the crossing of the river there is quite a distance of swamps, but it would be similar to this. There is a difference, though, because here you have some elevation to drain those swamps into the river, and when you get down to the river you have not that elevation.

THE CHAIRMAN: Does the situation improve as you come across here?

A. Yes, it improves here.

THE CHAIRMAN: At Fort Smith?

A. At Fort Smith you can stay up on the high ground and cross at the rapids.

THE CHAIRMAN: What about midway between Fort Smith and that point?

A. You would have some swamps, but not as many as near the delta, but there would be some, and, of course, you would have to ~~cross~~ the Slave River.

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One would also have to cross, as at the other places, the Slave River.

THE CHAIRMAN: Assuming the railway were to be built by the Grimshaw route, then if you were to get across the Slave River, am I correct in assuming that you think you would have to come up towards Fort Smith to do it?

A. I believe so. I haven't looked into that, but I would think so from what I have seen.

THE CHAIRMAN: If a railroad was wanted over near Uranium City, near the east end of Lake Athabasca, have you considered the situation with regard to building from, say, Peace Point across there?

A. Not to the extent that I have considered these routes, but I would think one could obtain a suitable crossing of the Slave River.

Q. How would that compare to building a railroad from Lynn Lake up around the north shore of Lake Athabasca?

A. That would be much shorter in construction. Say we went off at 250, or somewhere around there, or even 275 across at Fitzgerald, and we have Uranium City here: then we have got nine times sixteen, and that is 144. We will say 150 on to 275, and that would be 425. I have looked at this country (indicating). Once we get to here we get into very rough country. This is just, really, a rough estimate - 432.







THE CHAIRMAN: To build a railroad from Lynn Lake up to Uranium City means going through some pretty rough country?

A. Yes, there would be. Around the north shore of Lake Athabasca is quite rocky country. The north end of Lynn Lake to the north end of Reindeer Lake wouldn't be too bad; I have been over that. The Esk is running north and south, and that would not be too bad at all.

MR. BALDWIN: What were the two comparative distances?

A. From Waterways?

MR. BALDWIN: I thought there was one alternative from Lynn Lake and the other from Peace Point?

A. 150 miles from a point 275 miles north of Waterways to Uranium City: 150. From Lynn Lake it would be 450, we will say.

MR. BALDWIN: About three times as much distance to the Pre-Cambrian Shield on the east as on the west?

A. Yes - that is, to put a branch line through this proposed Waterways line over.

THE CHAIRMAN: That is to Uranium City?

MR. BALDWIN: Yes.

A. I will just take that and make sure it is right.

Yes, that is right. However, please





recognize that that is very, very approximate. There may be some of the greatest hills in the country to go over. That is just map mileages - that is all that is. You can get into some pretty dangerous situations by measuring maps without looking at the ground.

THE CHAIRMAN: I think that Mr. Baldwin and Mr. Fouks would like to have some questions put to you.

MR. FOUKS: No, I have no questions.

MR. BALDWIN: No, I am perfectly satisfied.

MR. FOUKS: I am very happy.

THE CHAIRMAN: Mr. Feehan?

MR. FEEHAN: I was looking at Mr. Bishop.

MR. BISHOP: No, I am quite satisfied.

THE CHAIRMAN: Well, thank you very much, Major Charles.

MR. BOYD: I take it, Mr. Chairman, you don't want to start another witness tonight.

THE CHAIRMAN: Well, it is ten minutes after five: let us take advantage of another half an hour.





MR. COOPER called

BY MR. BOYD:

Q. You are general manager of the Northern Alberta Railways: how long have you held that position?

A. Since 1951.

Q. Prior to that you were with the Canadian National Railways: in what capacity?

A. As general superintendent.

Q. Altogether you have had about how many years railway operating experience?

A. Back to 1914.

Q. A very lengthy experience on railway operating?

A. Yes, that is right.

Q. Mr. Cooper, you have had the opportunity of looking through the brief, and I would like to bring to your attention what was said with respect to operating costs: could you direct the attention of the Commission to any particular factors which would embrace you, as an operating man, comparing the Waterways potential route with the Grimshaw potential route?

A. Yes, I believe I can. In railroading, controlling grades are always a major consideration. The controlling grade on the Grimshaw route, of course, would be in our present operation; that is, going down over the Peace River valley where we have a 2.4 one way and a 2.2 the other way for a total distance of 16 miles. In the Waterways route we have about







2 per cent for about 3 miles.

Q. What is the significance of that when it comes to operating a railway?

A. Well, it means you have to lug the tonnage up these grades. In most cases you do it by splitting your train and doubling the hills.

Q. Is there any benefit to having the hill near a terminal as compared with a place that would not be near the terminal?

A. Yes, there is because if you are going to double the haul you can do so by a double unit, which we have at Waterways, or even put on an additional unit, or two units, whichever you may need to take the whole train up the hill, and you have your set up there to do that.

Q. That is on the Waterways?

A. That is on the Waterways route. At Peace River we did have a terminal at one period of time, but since we have gone into dieselization we have eliminated that terminal, and we would have to set that terminal up again, which is all at additional cost.

THE CHAIRMAN: Would you be likely to set up a terminal there if the railroad were extended north of Grimshaw?

A. No, not at Peace River, Mr. Chairman.

THE CHAIRMAN: You would have to do it because of the grade, would you?





A. Well, no, we would have to have some help for the train that we would haul, or split the train and make the hill in two or three pulls up the hill.

THE CHAIRMAN: And you would split the train at Peace River?

A. I would prefer that to sitting at the terminal.

COMMISSIONER GAINER: What horse power engines are you using at Peace River?

A. We have a 1750 diesel there - what they call a G.P.9.

COMMISSIONER GAINER: I was wondering what the break-off point is in using one engine: presumably you don't cut your power - or, can't cut your power down right to the fine point of your tonnage? It will vary from time to time. How much tonnage would you have to be hauling before you would get into difficulty with one unit of this size?

A. One unit of that size on the Peace River Hill - I would put it in cars: eight or nine cars.

COMMISSIONER GAINER: And this is about what you are operating now, is it, on your train?

A. Yes, we had two up there and we used two the other day, as an example, and we had about 20 cars and we set off about 200 tons. We stopped this unit for the purpose of taking a picture on the





Peace River Hill, and so we stopped the unit halfway up the grade, and that is why we left him about 200 tons light, and he was able, after backing up and taking slack, and a few other things, to continue on up the hill; that is a double unit.

THE CHAIRMAN: Can you estimate the extra costs of hauling a ton of freight through the Peace River valley because of the grades?

A. I haven't gone into that. I have looked at it in, probably, another way. We must look at it in the light of where we are going to work from. The distance that I have had intimated to me is, say, 430 miles north of Grimshaw, and on the Grimshaw route, and about 405 north of Waterways on the Waterways route. Well, looking at the Peace River route, first of all, a normal sub-division is 150 miles, more or less - that is a normal sub-division. But, we are all departing from that, and that is the general trend of railroading, to increase the length of sub-divisions. Your freight train traffic in the days past moved at slow speed. With diesel power you now have to up your speed and you up the grade of your tracks. So that 200 miles might be a pretty good sub-division to consider, and it should be considered if you are building a new line. So that would place the Northern Alberta Railways in the position - McLennan is the terminal for their men. So, with the doubling of the Peace River Hill







you would have to look for a terminal somewhat north of Grimshaw. You wouldn't stop at Grimshaw, because you would have to pay penalty miles, and, you understand all running crews are on a 100 miles or an 8-hour day basis. If you use all these running crews as you use them and call them out, you must pay them at least 100 miles. McLennan to Grimshaw is only 63 miles, so you pay penalty mileage. So, in dividing the territory I would like to have a terminal somewhere in the vicinity of Manning which is 50 miles, let us say, north of Grimshaw, and split the rest. It is 390 miles - splitting that, and that would be, say, 195 miles. So, in that way, by going the Grimshaw route, we have to set up a terminal at Manning, a terminal halfway between, and a terminal at the end of the line. When I say "set up a terminal", you must set up all the terminal facilities, and the men demand it. If you go to the Waterways route, we have our terminal at Waterways. It is 405 miles north of that, and that would be, say, 200 miles - the halfway point, and we set up only two terminals on the Waterways route.





THE CHAIRMAN: Instead of three the other way?

A. That is right.

MR. BOYD: Q. That would be roughly at Peace Point?

A. It would be roughly at Peace Point. 225 -- well, that is just about what it might be.

But there is another factor that we must consider. That is the flow of tonnage. Our flow of tonnage is to Waterways. We have no tonnage returning from Waterways; we merely bring back the empties which we take in there. We get a little bit of lumber here and there, but we never operate a tonnage train from here to Waterways; and in looking at serving a mine operation, it would complement our inbound tonnage with tonnage outbound and the proper utilization of your power.

THE CHAIRMAN: Would that enable you to charge a lower rate for the Pine Point concentrates?

A. Mr. Chairman, I have nothing to do with rates. We merely -- the rates are set. They are not set for that feature that I know of.

THE CHAIRMAN: But I take it you could feel you could operate your railroad to greater efficiency?

A. Yes, we could operate to greater efficiency.

COMMISSIONER GAINER: You mentioned, Mr.





Cooper, you had a terminal at Peace River. What were the circumstances there?

A. Well, that was a case in steam power. We did Peace River switching and a run to Hines Creek. That was part of an assignment. We had another assignment which ran from McLennan to Peace River, did Peace River switching and hoisted the loads up to the top of the hill to help each other, but this last winter we decided we would make that just one run. Now with the diesel power we run from McLennan to Hines Creek and from Hines Creek back to McLennan, with an occasional train to Peace River if there is fish shows up.

THE CHAIRMAN: Fish, did you say?

A. We sometimes get fish from Slave Lake to take down the highway by truck and put it in for shipment to the east, Chicago, New York, and to accommodate the shipper it quite often on a Wednesday will be fish. Well, we will run a train from McLennan, if there is a certain amount of fish, down to Peace River. That is the off-day to our passenger train.

THE CHAIRMAN: Have you ever estimated how much it would cost to get over that valley, that there are sixteen miles altogether? Is it evenly divided on both sides?

A. Yes, approximately. It is 9 point -- I forget the mileage, but it is about halfway.







THE CHAIRMAN: Assuming it is halfway, you haul the full train down into the valley?

A. We take the full train into the valley.

THE CHAIRMAN: And you take half of it off?

A. No, we take what the engine can handle. It is not a question of half. I have seen trains come down that valley with 50 loads that gathered up between Hines Creek and the top of the hill. Well, on the old steam power I think the tonnage was about 563 tons, all depending on the rating of your steam engine, and, say, 563, that would be about seven cars. Well, the diesels do a little better than that. If you bring 50 down, you are going to bring up about -- you will have to take that up in about five cuts. That is why we have the switcher up Peace River.

THE CHAIRMAN: That is the engine pulls a full load up the hill five times, that is 40 miles extra pulling a load?

A. Yes.

COMMISSIONER GAINER: That is to say, you had an extra engine in the yard, the switcher?

A. Well, we did at that time; we had this assignment, so that we had a crew at Peace River and they took over this engine at night time and brought the loads up the grade.

THE CHAIRMAN: As far as Waterways is concerned, that extra 2 per cent grade is right at Waterways?





A. It is right outside Waterways. Waterways draper is right outside Waterways, and it is up the hill. That is where they first took out the tar sands, and it is just a three-mile grade in there.

THE CHAIRMAN: That is the logical place for a terminal?

A. There is another feature also I haven't mentioned. Our trainmen on our, what we call, Smoky and Peace River hills have a rule that a third brakeman must be employed when trains consist of 50 cars or more. We have no such ruling on the Waterways run.

THE CHAIRMAN: The Smoky Valley?

A. That is Watino.

THE CHAIRMAN: That is not one that is ---

A. No. I just mention that, but that is the ruling, and it is a valley similar to the Peace where we follow the river down and they follow it up again over the grade.

THE CHAIRMAN: It happens, though, that the terminal at Waterways coincides with the heavy grade?

A. Yes.

THE CHAIRMAN: And it is not possible, I take it, to have the terminal and the heavy grade at Peace River coincide?

A. No. You are asking -- you see, we split at McLennan, Mr. Chairman, and go west to Dawson Creek and to Hines Creek. That is our terminal, our power.





That is our set-up. We require a terminal at McLennan.

MR. BOYD: I have no further questions.

COMMISSIONER GAINER: Mr. Cooper, in respect to this ruling, how often would you put a 50-car train over that run?

A. On the Peace River at the present time?

COMMISSIONER GAINER: Yes.

A. Not too often.

COMMISSIONER GAINER: Well, keeping in mind the tonnages anticipated from Pine Point here, what would you run? -- 50, 60 cars a day?

A. You mean from Pine Point?

COMMISSIONER GAINER: Yes.

A. We wouldn't want to operate that on an eight or nine-car basis; that must be operated on a heavy train. The only way we would ever hope to survive there would be putting a three or four-diesel unit on it.

COMMISSIONER GAINER: What would you visualize in the mining operation if it went to Peace River?

A. Well, I don't know just how they propose to ship this ore. I have had considerable experience handling ore from Steep Rock in Ontario and we had a similar situation -- no, it was in reverse there; we had the grade out of Atikokan. We hauled over a difference of 55 miles and put the whole train out and went back and got another one,







and we were hauling 50 cars out of Atikokan, and I think it was Huronian, and then we put the two trains together to haul them into Port Arthur. If we had, say -- I don't know what tonnage we would have to have or what tonnage is going to be provided per day or every second day, but I would, oh, shoot for about 7500 tons.

COMMISSIONER GAINER: You would visualize it as a large train operation?

A. Yes.

THE CHAIRMAN: Seventy-five hundred tons you would want?

A. Well, I don't know, Mr. Chairman, how this is going to be divided, but 7500 tons and probably three diesel units on it would make a nice train.

THE CHAIRMAN: The proposal is 215,000 tons a year. Now, 7500 -- that is only about 26, 27 trains a year, isn't it; one every two weeks?

A. Well, I don't know whether they plan a winter operation or not. I am only giving my views on how I would like to see it come, rather than sending a number of trains up there and bringing out about ten cars.

COMMISSIONER GAINER: Just going to the large train situation which you might visualize, would there seem to be any reason why you would do any shuttling anywhere else -- at Smoky?

A. No, Smoky doesn't enter into it; just





Peace River.

THE CHAIRMAN: Would you gentlemen like to talk to Mr. Feehan and have some questions for tomorrow?

MR. FOUKS: Yes, Mr. Chairman.

THE CHAIRMAN: Would you mind coming back tomorrow morning, Mr. Cooper, because I think these gentlemen would like to have some questions put to you tomorrow morning?

MR. COOPER: Yes, Mr. Chairman.

THE CHAIRMAN: We are going to adjourn now until nine o'clock tomorrow morning.

---Whereupon at 5.45 p.m. the hearings were adjourned until 9.00 a.m., Wednesday, September 30th, 1959.



**ROYAL COMMISSION**  
**ON**  
**GREAT SLAVE LAKE RAILWAY**

**HEARINGS**  
HELD AT  
**EDMONTON, ALBERTA**

VOLUME No.: *11*

DATE:

*Sept. 30/59.*

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ROYAL COMMISSION ON  
THE GREAT SLAVE LAKE RAILWAY

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Hearings of the Royal Commission  
on the Great Slave Lake Railway  
held at the Court House, Edmonton,  
Alberta, at 9.00 a.m., Wednesday,  
September 30th, 1959

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PRESENT:

MR. M. E. MANNING	Chairman
MR. WALTER D. GAINER	Member
MR. JOHN ANDERSON-THOMPSON	Member

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MR. FRANCIS M. FEEHAN	Counsel
MR. A. PATERSON	Secretary

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---On resuming at 9.00 a.m.

MR. BOYD: Mr. Cooper is available for any questions there may be.

THE CHAIRMAN: Mr. Feehan, have you any questions that you wish to ask? I think Mr. Gainer would like to ask Mr. Cooper some questions.

COMMISSIONER GAINER: Just before any other questions come up, Mr. Cooper, I wonder if we can attempt to establish some-how the importance of the operating costs as between these two routes, or the comparative costs. Would it be fair to say in view of the preliminary reconnaissance that there would be some uncertainty, plus or minus, about the cost of construction of the line until further surveys are made? Would that apply to operating cost to some extent as well, because at this stage there is some uncertainty about the kind of grade you would have, and the exact nature of the country you would be going through? What I am asking is this: How strongly do you feel that the operating costs would be lower on one line than on the other at this stage?

A. Well, of course, until we have a definite grade, or know what we are going to contend with on the inter-route, we would not be able to establish cost. In my discussion yesterday I merely tried to point out from the present set-up





the difference in operating the two routes.

COMMISSIONER GAINER: Yes. Well, I am not sufficiently familiar with the whole operation to be able to evaluate the thing in detail, but I wondered how far you would go in suggesting that one line might or might not have lower maintenance and operating costs -- or, can you say that there would be any difference at this stage?

A. Well, all running trade agreements are on a mileage basis, and that is how we pay our men. In addition you have the disadvantage on the one route of having to set up three terminals whereas you can get away with only two terminals on the other route. That means another crew that you must cut in.

COMMISSIONER GAINER: And in the total picture this might be a fairly important item in terms of total operating and maintenance costs?

A. Yes, sir.

THE CHAIRMAN: Can you calculate it as a percentage, Mr. Cooper?

A. Well ---

THE CHAIRMAN: I should not have used the word "calculate". Can you estimate it?

A. You cannot very well calculate, Mr. Chairman, until you know what you have got.

THE CHAIRMAN: You know, for instance, it is not going to be 50 per cent of the operating costs?

A. No.







THE CHAIRMAN: At least, I assume it would not be?

A. No, I do not think I would care to make a statement that one is going to cost so many dollars and the other is going to cost so many more dollars. You have got the question of controlling grades -- that is the entire thing -- and what you are going to do with it and how much of this track you are going to get at one time is another question. If it is a question of only getting a few loads a trip, well, it can become very costly whereas if you can get a volume and get tonnage for it you can put the units on and haul a train and you reduce your cost then. I think there are too many changing features in the thing which make it impossible to give you a definite answer that it would cost so much more this way than it would the other way. There are a lot of factors that I am not aware of such as which way the route is going to be and what ultimate grades we are going to have.

COMMISSIONER GAINER: Perhaps I could put the question to Mr. Boyd. On page 23, Mr. Boyd, under (e) in the Conclusions, it is suggested that the operating costs per unit of traffic would be less on the Waterways route, and that would be justified, I think, at this stage because of the shorter mileage. Was that the suggestion made yesterday?

MR. BOYD: This is per unit of traffic?

COMMISSIONER GAINER: Yes.





MR. BOYD: So the volume of traffic is quite a feature, and that is to be dealt with in the next evidence that is coming up.

COMMISSIONER GAINER: But from the point of view of physical costs it would be just the distance factor?

MR. BOYD: The shorter mileage and the grade. You could not put a dollar factor at the present time on the grade, but it would be present to some extent depending on the traffic and other factors mentioned by Mr. Cooper. I do not think any witness can be more specific on that point at this stage.

COMMISSIONER GAINER: Yes. I wondered just how much ---

MR. BOYD: No, (e) of the Conclusions definitely includes the volume of traffic as one important factor.

THE CHAIRMAN: Mr. Boyd, I would like to ask you a little more about that. There is this question of the extra terminal and the extra cost of getting the traffic through the Peace River valley in the case of the western route. I am interested in knowing -- there is certainly some extra cost?

MR. BOYD: I think we might have a bit of studying done to see what figures we can produce which would give you the range.

THE CHAIRMAN: Yes, that is the sort of thing we need.





MR. BOYD: Yes, given certain volumes of traffic, and that sort of thing.

THE CHAIRMAN: I am interested in knowing whether it is a trifling thing or a substantial thing.

MR. BOYD: It is not the type of thing we can take off in ten minutes but we will work something out to the best of our ability and give it to the Commission.

THE CHAIRMAN: Yes, it is difficult for us to know whether things like this are going to be relevant.

MR. BOYD: Well, we will certainly undertake to do some studies and, making certain assumptions as to the relevant factors, see what the range would be in order to be able to give the Commission some idea of the importance of this factor.

THE CHAIRMAN: In the next part of your brief this matter may come out, but do you intend to tell us about how much traffic you feel is required over that railroad to make it pay its way?

MR. BOYD: We do not intend to go into that at all. Our brief was presented from this point of view -- the first word in our Conclusions is "If". The Conclusions start off: "If a railway is to be built. . ." and the Terms of Reference of this Commission require it to decide which is the preferable route. That is strictly a comparison. We do not have any comment to make as to whether any railway would ever hope to pay for itself. We have not dealt with that.







THE CHAIRMAN: I was thinking of the question only from this point of view, that if we know something about what volume of traffic is required, and what the total costs are, we can do a little calculating ourselves as to how important some of these additional costs may be.

MR. BOYD: Well, I must say we have been very careful to stay away from that subject. It is strictly a comparison between the two alternative routes without any attempt at assessing the overall picture of deficits or profits or anything else, of either one. It is strictly comparative as between these two lines, if one or other is to be built. Our conclusions are based on our experience and the factors we have considered, and we feel the Waterways route would be the better route as regards the relative economic worth, but we do not say what the overall operating financial results would be of either line. We have been quite careful not to say that, and I did not consider it was within the Terms of Reference as I read them, and, therefore, we did not address ourselves to that question.

THE CHAIRMAN: No, perhaps not.

MR. BOYD: Is there anything further of Mr. Cooper?

THE CHAIRMAN: I would like to ask Mr. Cooper another question, if I may. This is, perhaps, something that you can give a little consideration to, and





tell us about later on. What, would be the charge for carrying concentrates from Pine Point to Trail? Mr. Jewitt suggested that he hoped he might have it done for a cent a ton-mile, and I take it that he fears it might go up to  $1\frac{1}{2}$  cents a ton-mile.

MR. BOYD: I do not think Mr. Cooper is prepared to deal with that, but if he wants to he can try.

MR. COOPER: My field is not rates, Mr. Chairman. The rates are generally dealt with through the Board of Transport Commissioners.

THE CHAIRMAN: Can you tell us anything about that, Mr. Boyd?

MR. BOYD: No, sir, except that as Mr. Cooper has said if a line is built and traffic moves over it then it moves over it under tariffs which have to be published in accordance of the directions of the Board of Transport Commissioners for Canada under the authority of the Railway Act. Every rate except a competitive rate -- and sometimes even competitive rates -- are subject to the absolute control of that Board, so that even if we agreed with any given shipper as to what we will do that does not mean it could be. It can only be done if the Board of Transport Commissioners allows it to be done.

THE CHAIRMAN: You know what the Board of Transport Commissioners has done in other circumstances. Is there something that it has done which might be a guide as to what to expect from the Board?





MR. BOYD: I really could not answer that. There are so many cases. The shipper says the circumstances are exactly the same as in other cases, and we know that they are not. It depends on the position at which you look at any particular problem. We have in our Conclusions set out certain thoughts as to revenues, and they are based on what we think will be produced from this traffic. That may not be the same view that Pine Point Mines will take, or the same view that any other shipper might have, but whatever views are expressed it is the Board of Transport Commissioners which has the say as to what the rate will be at any given time. So, I do not think anybody can, at this stage, answer your question with any more accuracy than that, and certainly not Mr. Cooper.

COMMISSIONER GAINER: Perhaps at a later stage, Mr. Boyd, we will be entitled to ask for the assumptions you have made in connection with freight charges in order to make some calculation as to revenue.







THE CHAIRMAN: Mr. Feehan?

MR. FEEHAN: Mr. Fouks has directed my attention to page 23 in which there is a figure quoted of \$600,000 a year, and he would like to have a breakdown of that figure.

MR. BOYD: This again is anticipating the evidence to be given.

MR. FEEHAN: Yes, at a later time.

Many of the questions I was going to ask have been asked by yourselves, but there was some reference made to the fact that railway cars dead-head back from Waterways. Is this also the case from the Grimshaw and Peace River area?

A. In general, cars dead-head back from Waterways. Certain types of cars also dead-head back from the Grimshaw or any other area.

MR. FEEHAN: It would be the general rule from Waterways, but not the general rule from - -

A. A nice clean box car and we unload on any of our lines west, why, we reload and ship it out.

MR. FEEHAN: The Peace River would be the same as any other area in Canada?

A. Yes.

MR. FEEHAN: But Waterways is an exception to the general rule in that they virtually always dead-head back?

A. Well, we do get some loading there





on flat cars, we get loading by flat cars, because it goes into the north and we have an opportunity of loading flat cars there when the equipment comes back out. It all depends on the type of car. There are many types of cars. Lots of cars go in there that are unfit for grain; some of them we use for lumber and some of them are unfit for lumber and we must haul them back empty.

MR. FEEHAN: Would you say that the present Waterways Railway is operating at a profit or a loss?

MR. BOYD: I don't want to be objecting to anything, but I don't know what the relevance of that could be to this Royal Commission. I haven't any objection to the question being asked; I just want to stop it as an inquiry into the general operations of the railway.

MR. FEEHAN: The reason of my asking the question was this, sir, that there is a proposal that the railway be extended, and I was wanting to compare the present routes as they exist, whether one is better economically for the railway than the other, and then in the light of what presently exists which should be extended.

THE CHAIRMAN: What do you say to that, Mr. Boyd? I may say this, Mr. Boyd, that Mr. Cooper gave me the impression yesterday - I may be wrong - but one reason why he felt it was advantageous to





build a railway along the eastern route is that at the present time there is very little traffic coming from Waterways to Edmonton, it returns empty, and if there is an extension of the railway built to Pine Point it would mean that these cars would be more inclined to come back filled.

MR. COOPER: No, it wouldn't be those cars. The cars that I would assume that are going to be used by the Pine Point Mines are special ore cars, a different type of car altogether, and those cars we would naturally have to take back empty to the Pine Point Mine.

What I tried to clear was this, that we have these trains going up there, a continuation of the line. We would then run that up to Pine Point with the empties and come back with the empties and loads on that train. It is a continuation of your train operation.

MR. BOYD: I think actually Mr. Cooper was speaking yesterday from the operating features rather than the overall deficits or profits of one line against the other, as I understood it at the time.

THE CHAIRMAN: It agains sounds to me as though the ore train coming from Pine Point to Edmonton would be a convenient means of bringing the empty cars from Waterways to Edmonton.

MR. BOYD: That is right.

THE CHAIRMAN: And the Pine Point operation







would be used to assist the operation between Pine Point and Waterways. There is nothing wrong with it, but it is a fact that we would like to establish.

MR. BOYD: If that is the point, all right. I understood the question was asking for the financial results of the N.A.R.

MR. FOUKS: My point, Mr. Chairman, was this, actually. The evidence yesterday, as I understood it, was, as you understood it, that the cars were coming back from Waterways empty. The point involved was that that was brought out re Waterways-Edmonton, but not Grimshaw-Edmonton. If they are losing money on the eastern route, the fact that they are bringing cars back from the western route would make up that loss. That was the point, Mr. Chairman.

MR. BOYD: I was just speaking to the next witness, Mr. Rotstein, and I was asking if he could deal with that in his evidence and he tells me he can, he can deal with it. That might meet the requirements of everybody.

THE CHAIRMAN: Mr. Cooper might tell us this, whether you would do the same sort of thing from Grimshaw if the road was extended north of Grimshaw instead of Waterways, bring empty cars back.

MR. COOPER: Definitely, sir.

THE CHAIRMAN: Have you as many empty cars to bring back from Grimshaw as from Waterways?

MR. COOPER: You must look at the Water-





ways traffic. The bulk of the Waterways traffic is sulphur, oils, gasoline. The tank cars - there is nothing else to load in them, you must haul them back empty. The sulphur cars are in what we call a swing service. We don't load anything else on the sulphur cars; they go back to the originating point where the sulphur is loaded in southern Alberta, and the same cars are in this swing service, and there is a lot of rough freight goes to Waterways which we load into rough cars. We have certain cars which are only fit for certain loading. Our loading in the rest of the territory - mind you, from Lac la Biche south to Edmonton we have grain and lumber loading; in fact, we got it from Imperial Mills north of Lac la Biche. But the movement of empty cars is a necessity on any railway.

THE CHAIRMAN: The way you have described the nature of the freight from Waterways, it sounds to me as though there is a little larger proportion of empty cars coming from Waterways to Edmonton than there is from Grimshaw to Edmonton.

MR. COOPER: Yes.

THE CHAIRMAN: I don't know whether it is relevant or not, but it may be.

MR. COOPER: I may put it this way, Mr. Chairman, that in our Waterways traffic, when the flow of traffic is to Waterways, we have run as many as five trains a day to Waterways. The normal





flow to Grimshaw and Pine Point - we only operate a freight train, so this would be more traffic to Waterways in that way.

THE CHAIRMAN: Are you satisfied now, Mr. Fouks?

MR. FOUKS: I am satisfied to wait until Mr. Levesque gives evidence.

THE CHAIRMAN: Anything more, Mr. Feehan?

MR. FEEHAN: Yes, sir, I have this question. I was wondering about a hypothetical case where a fully loaded train and a heavy train being pulled by the usual diesel equipment - if that train were to take a run at the hill, Waterways, at the 2 per cent grade, could take and pick up a portion of the train again. Would it have to make two trips to Waterways?

MR. COOPER: That is a question again of the power that you put on to haul that train up the hill. My point in that is that we are situated at Waterways with the terminal and a possible yard engine, and the yard engine would be a diesel, the same as we are operating, and the additional unit would quite possibly take this train up the hill. The severe grade is only for a distance of about three miles, and these diesels will walk up the hill - not fast, but you can get them up the hill.

MR. FEEHAN: I was aware of the fact that there is a terminal there, but that really







doesn't answer the question that I asked. I said it was a hypothetical question, and I believe Mr. Bishop wants an answer.

If a heavy train, pulled by the normal equipment were to go up that hill, would it go up, do you know?

MR. BISHOP: Could I rephrase the question, Mr. Chairman?

What I had in mind, Mr. Cooper, more or less in general, is the fact that any steep grade on tangent in the open so that the train has to go up that grade and take a run at it - does that make an appreciable difference to the necessity of splitting trains? For instance, trying to compare the grade at Peace River apart from its length and more by virtue of its location; it starts from a curve. In other words is there an advantage which tends to - -

MR. COOPER: Oh, you have that advantage, because I mentioned yesterday that the first station out from Waterways is Draper, and the grade doesn't really start until you get south of Draper.

Talking about running for a grade - certainly they would try to get the best speed out of the train they had in the distance they had; but they are controlled as to tonnage, and I don't even know how a diesel will operate on the Waterways hill, for the simple reason that we have not had a diesel up there. We know the advantage we have on the Peace





River hill, but this coming year we have more diesels on the way and this coming year we can tell you if they will take them up the hill or not.

MR. BISHOP: I think that is all, Mr. Chairman.

MR. BALDWIN: I think I suggested a line of questioning. Probably if I made a comment here Mr. Cooper may be able to deal with it. I noticed yesterday Mr. Jewitt expressed some concern. I think his brief was based on the fact that there was a differential of 54 miles which might cost his company \$200,000 a year more in freight costs. I think a natural corollary from that is there would be \$200,000 more to the railways' revenues on the western route. Now, it has been suggested that one of the advantages of the eastern route is that the traffic now being carried to Lake Athabasca by barge from Waterways would be carried an extra 225 miles more to Peace Point which would provide substantial additional revenue to the railway companies.

My question was this: Is that, on the same basis as Mr. Jewitt raised the problem, not going to throw more burden on the mining industry in the Lake Athabasca area?

MR. BOYD: That, I think, will be forthcoming from the next witness. Mr. Cooper is an operating man and these broader aspects will be given





by the next witness, if Mr. Baldwin has no objection to agreeing with that.

THE CHAIRMAN: There is nothing else, Mr. Cooper.

MR. BOYD: The next witness, Mr. Rotstein, will be produced and led by my colleague Mr. Levesque.

I understand we have more furniture to move; we may be asking for a short adjournment.

THE CHAIRMAN: Would you like an adjournment?

MR. LEVESQUE: Yes, Mr. Chairman.

THE CHAIRMAN: We will adjourn for five minutes.

--- A short recess.







THE CHAIRMAN: Are you ready now, Mr. Levesque?

MR. LEVESQUE: Yes, Mr. Chairman.

Mr. Chairman and members of the Commission, as my colleague Mr. Boyd mentioned earlier, Mr. Rotstein will be the next witness. He will be speaking to a great portion of the rest of the brief. I would like to call Mr. Rotstein:

M. ROTSTEIN, called

BY MR. LEVESQUE:

Q. Mr. Rotstein, will you give your full name?

A. Morris Rotstein.

Q. Will you outline your academic record for the Commission?

A. I took a Bachelor of Arts degree at McGill University, and I have a Master's from the University of Chicago.

Q. After leaving university I understand that you entered the service of the C.P.R.: in what capacity?

A. I am associated with the Research Department of the Canadian Pacific Railway since 1957.

Q. What is your function there?

A. I am in the Economics Branch of the Research Section, and referred to as a Research Economist.





Q. In this section of the submission reference will be made to the agricultural, mineral and forestry resources in the respective areas, in the light of the immediate and potential rail traffic which could be anticipated: will you describe the agricultural areas which you considered in your study?

A. Two agricultural areas exist in the sector of Northern Alberta which lies north of the 56th parallel; they are encompassed by what would be the northern extensions of the eastern and western boundaries of Alberta. The western region adjacent to the Mackenzie Highway and north of Grimshaw may be described as the northern portion of the Peace River valley, while the eastern region, north of Lake Claire, is referred to as the Slave River valley. The two areas are shown in Exhibit 1, and it is filed at the back of the brief.

Q. Will you point out the areas?

A. The two areas are depicted: the area on the west of the Peace River valley, and on the west we have depicted the Slave River valley.

Q. What is the relevance of those areas to the railway?

A. The railway would bisect or pass through these two agricultural regions.





Q. Now, would you speak generally on the Peace River Valley area?

A. The northern portion of the Peace River Valley includes within its territory the Manning, Keg River and Fort Vermilion areas. The major portion of the land has been classified as grey wooded soil with frequently occurring patches of muskeg and peat. Precipitation averages approximately 12 inches per annum accompanied by cool temperatures, low evaporation and short growing seasons. The best farmland is located around Manning (55 miles north of Grimshaw) and Fort Vermilion (230 miles northeast of Grimshaw) where degraded black soil is common.

Q. Would you describe the extent to which farming has taken place in the Peace River Valley?

A. At the present time, small-scale farming takes place in a broad belt adjacent to the highway running to more than 160 miles north of Grimshaw and extending east to the Fort Vermilion area. Appendix A-1 which we have filed at the back shows annual production of principal crops and yields for the agricultural areas of Manning and Fort Vermilion. Appendix A-2 shows grain production and yields for the Province of Alberta. The volume of grains received by the Northern Alberta Railways at Grimshaw, Alberta, in the crop years between 1949 and 1959 is set forth in Appendix A-3. It has been estimated that approximately 90 per cent







of grain movement ex Grimshaw comes from the Northern Peace River Valley. Grain from the northern areas is trucked to the railhead at Grimshaw.

Q. Would you say a few words about cattle production in the Peace River area?

A. In the period 1941 to 1951, the number of beef cattle showed a substantial increase. Attempts are under way to increase the number of cattle in the face of adverse climatic conditions and flies.

MR. BALDWIN: I wonder if the witness has any indication as to what type of flies are referred to there. I was interested in that particular statement, Mr. Chairman.

MR. ROTSTEIN: We refer to the black flies which exist in that area.

In the past, local requirements were not met by local production; however, with increased diversification from grain production to cattle production local needs should be satisfied and some export of cattle is anticipated.

MR. LEVESQUE: Would you tell us something about the development in this area?

A. Trends in population from 1941 to 1956 and agricultural development from 1941-1951 are depicted in Appendices A-4 and A-5, which are included at the back of this submission. While significant percentage increases took place in the population of this area from 1941-56, the absolute increase was





small. The number of farms and the farm population between 1951 and 1956 was relatively stable in the Grimshaw-Manning area and extending west to the Alberta border; however, there was an increase in the area of farms under cultivation. While these figures show an increase in agricultural activity, the absolute amount of the increases has been rather small.

Q. Is there an appendix showing the growth in number and acreage of farms?

A. We have Appendix 6 which we have not mentioned in the text. However, it is included with the submission, and it depicts the number and area of occupied farms by Improvement District in the northern part of Alberta. It is Appendix A-6.

Q. Now, would you describe the Slave River lowland?

A. The Slave River lowland lies along the Slave River between Great Slave Lake and the northern boundary of the Province of Alberta. The area has a relatively short growing season, but it produces coarse grains, feed crops, vegetables and hay largely for local consumption. On the basis of soil characteristics, it has been estimated that about 73 per cent of the area is suitable for potential agricultural development. About half the land consists of open meadows, while the remainder consists of forest land. Appendix A-7 denotes the various degrees of arability of the land.





Q. What, if any, conclusions have you reached on the soil characteristics in this area?

A. Examination of the major characteristics of the agricultural resources of the Slave River lowland indicates that:

1. The quality of the soil would permit production of coarse grains, vegetables, feed crops and hay. Good pasture land could easily be developed.
2. Generally the agricultural produce of the Slave River lowland may expand from present levels, largely to supply local demands. The advantage of better moisture conditions relative to the Peace River Valley, e.g. 17 inches as compared to 12 inches per annum in the Peace River, is offset by the lesser number of frost free days. It is not anticipated that the area will be a net exporter of agricultural commodities; however, construction of a railway might promote cattle production for shipment to southern and northern markets.

Generally, however, the resources in this area are less conducive to agricultural development than those in the Northern Peace River area.

Q. Now, we come to market outlook and development potential. What are the main factors







that will influence the pace of agricultural development?

A. The pace of agricultural development and particularly that in the northern part of the Peace River Valley, will be conditioned largely by future levels of demand for Canadian agricultural products, as well as possible developments in other Canadian areas which would be competing sources of supply.

For the Canadian economy as a whole, forecast increases in population and living standards are expected to lead to increases in domestic consumption of farm products. Per capita consumption of wheat is expected to decline, but the population increase, with total population forecast at the 21 million level in 1970, should more than compensate for this factor. The demand for pork and beef should increase giving rise to increased demand for feed grains.

Canadian wheat exports are expected to increase. Foreign demand for livestock and dairy products may show intermittent increases. However, in general, exports of these items will decline while Canadian demand will rise.

The outlook consequently is for expansion in Canadian agricultural activity in the years ahead. Much of the growth will be concentrated in livestock and the bulk of the growth will be accommodated by the more southern areas in Canada. This





is because of the proximity to markets and increased mechanization and development of a more intensive type of agriculture.

Q. Now, in comparing the two areas would you say there is any significant difference between the two routes from the standpoint of additional railway revenue from agricultural products?

A. From the standpoint of additional railway revenue from agricultural products there is no significant difference between the routes. Even in the face of rising demand for agricultural products no large movement over a railway north of Waterways could be expected in the foreseeable future. However, a limited movement of livestock is a possibility. A railway extending north from Grimshaw could be expected to move approximately 1,800,000 bushels of grain annually and show some increase over the long term. Shipment of livestock is expected to continue to move by truck. The value of the potential agricultural traffic over the route north of Grimshaw is assessed in a later section of this submission.

MR. LEVESQUE: Now, Mr. Chairman, as Mr. Boyd mentioned earlier, certain portions of this brief were prepared by other officers, and they will be speaking to the brief. We are coming to such a portion now, namely the section dealing with mining. It was prepared by Mr. Gordon Hutte who has since retired from the service of Canadian





Pacific Railway Company. He is an industrial geologist and is well known in his field, but unfortunately through ill-health he had to retire, and through ill-health he cannot be present here. For this reason, unless the Commission wishes me to read this portion of the brief which will not be spoken to, I would ask that it be incorporated in the record. This would include the section on mining starting on page 9 and going to page 13 up to the paragraph which is headed "Market Outlook and Development Potential", to which Mr. Rotstein will speak.

THE CHAIRMAN: You would like to have that considered as having been read?

MR. LEVESQUE: Yes.

A. An evaluation was made of known mineral occurrences and mining developments from existing northern railheads in Alberta into the Northwest Territories as far as Coppermine. Current and future activity around Lake Athabasca was also considered. An examination was undertaken of the geology of the areas, Exhibit 5, to be served by the railway directly throughout its route. From the study, supplemented by additional sources of information, the following conclusions were drawn:

A railway from Grimshaw will serve directly mining operations only at its northern terminal -- Pine Point, as there are no known metallic mineral resources along its route. In this regard the







railway, if constructed on this route, would pass through the Interior Plains which extend from northern Alberta and northeastern British Columbia to the Arctic Ocean. These plains are underlain with sedimentary strata of the Paleozoic and Mesozoic ages which are not associated with metallic minerals. Such a geology is favourable for evaporites such as gypsum and salt, as well as coal, gas and oil.

A railway from Grimshaw would also indirectly provide improved transportation facilities to current and future mining operations around Great Slave Lake and north of that general area, since barge transportation from a terminus on Great Slave Lake northwards would be feasible.

A railway extending from Waterways would provide the following:

1. It would serve the proposed mining development at Pine Point and would indirectly provide improved transportation facilities to current and future mining operations around Great Slave Lake and the Northwest Territories in general, provided barge-rail terminal facilities were constructed on the south shore of Great Slave Lake.

Mineral occurrences in the Great Slave Lake area include arsenic, antimony, beryllium, bismuth, copper-lead-zinc, gold,





nickel, molybdenum, silver.

2. It would provide improved transportation facilities for mining operations along the northern shore of Lake Athabasca.

Mineral possibilities in the area west of Lake Athabasca include gypsum, limestone, sandstone, and salt. In the area north of Lake Athabasca uranium is currently being produced while occurrences of gold, copper, nickel, lead and zinc, iron, and molybdenum have been found.

With regard to uranium, consideration has been given to the future prospects of the Canadian uranium industry. Mr. S. W. Clarkson, Economist for Atomic Energy of Canada Limited has recently stated that, at the present time, the industry is only assured of a market in 1962 for slightly more than one-half of the current free-world output.

The reasons for this are termination of U.S. contracts after 1962. The U.S. options for uranium may not be exercised in the face of the substantially increased supply of this mineral. While the demand for Canadian uranium may decline after 1962, there are encouraging signs that peacetime uses of atomic energy such as power generation and increasing demand from underdeveloped areas for





and other uses should stimulate the Canadian uranium industry.

The Northern Alberta Railways, therefore, anticipates a reduction in traffic associated with uranium mining operations on the north shore of Lake Athabasca after 1962. However, during the balance of the 1960's, traffic associated with uranium mining may gradually increase to the level that it is today.

It would allow active exploitation of a known commercial deposit of gypsum between Boyer Rapids and Peace Point on the Peace River, provided the deposit is released from the Federal Government restrictions on mining in national parks. In this regard, although marketing problems will arise, the construction industry and the cement plants in the Edmonton area could provide a market following the construction of a railway and granting of mining rights.

It would be well located relative to potential mineral development along its route, since it would, to a considerable extent, closely parallel the edge of the Canadian Shield.

In this connection Mr. A. H. Lang, F.R.S.C., Chief of the Mineral Deposits Division, Geological Survey of Canada, and Mr. R. J. W. Douglas, Head of the Geology of Fuels Section, Geological Survey of Canada, in a joint paper on Minerals and Fuels at a symposium presented to the Royal Society of Canada in







1958 on The Canadian Northwest: Its Potentialities, said in part:

" . . . The completely unrevealed mineral possibilities of this huge region are believed to provide potentialities far beyond those of known deposits and occurrences. The Shield and Cordilleran region offer thousands of square miles favourable in a general way for the occurrence of mineral deposits . . . "

At the same symposium Professor Wm. C. Wonders, Professor of Geography, University of Alberta, stated as follows:

" . . . It is now generally appreciated, I believe, that the mineral resources are the basis upon which the potential of the Northwest must primarily be assessed. Other resources may supplement its economic development but minerals will be the key, as indeed they have been for the past 50 years . . . Transportation will be governed chiefly by the mines, as at present. It may well be that the railway extension to Great Slave Lake and the introduction of new techniques of transportation designed for the particular needs of the area will see the development of new centres to provide those services, or they may simply emphasize further the importance of some of those now existing . . . "





It would pass directly through the Athabasca Tar Sands and would assist in accelerating the exploitation of the deposits.

It is not within the scope of this brief to assess the timing for the development of the Tar Sands; however, it is known that one development group has reached the stage of pilot plant operations expected to lead to full scale recovery of the bitumen. A railway from Waterways would pass close to this proposed recovery plant and provide direct rail transportation for several thousand tons of construction materials as well as yearly maintenance supplies. In addition, heavy fuel products may be shipped to proposed mining operations in the Northwest Territories.

Q. Mr. Rotstein, will you now speak to the market outlook and development potential concerning mineral resources? What are the factors which will govern the future level of demand for minerals?

A. The bulk of Canada's mineral production is sold on world markets. Consequently, future levels of demand for Canadian minerals will depend upon:

1. The international demand for individual minerals.
2. The cost of production at competing sources of supply relative to Canadian





costs.

In recent years, approximately two-thirds of the free world's nickel and 10 per cent of world copper, 10 per cent of the world's lead and 9 per cent of world zinc production has come from Canada. In addition, Canada has ranked as third largest producer of gold.

The general outlook for business activity in the industrial countries of the world is one of long-term growth, while it is believed that the exploitation costs of new Canadian mineral deposits will not differ markedly from costs in other parts of the world.

Q. Is it expected that Canadian output of metallic minerals will increase in the next fifteen years?

A. The output of the metallic minerals industry in Canada is expected to increase substantially during the coming fifteen years. Canadian output is expected to increase its share of world markets, especially that of the United States. This is borne out by studies completed both in Canada and the United States, which point to a steady depletion of low-cost mineral deposits in the United States.

The substantial demand for Canadian minerals which can be expected in the next 20-30 years will, no doubt, have to be satisfied from new







sources of supply -- one of which will be the Precambrian Shield area of northwestern Saskatchewan and the Northwest Territories.

MR. LEVESQUE: Now, that completes one of the resources, namely, minerals, and the next section deals with forestry.

THE CHAIRMAN: Perhaps Mr. Rotstein would not mind reading the last paragraph on that subject.

MR. LEVESQUE: I had incorporated this paragraph, Mr. Chairman, because it outlined facts with which Mr. Rotstein is not familiar, but I will have it read if you wish.





THE CHAIRMAN: This is the conclusion of that section.

MR. ROTSTEIN: Both routes are equally suitable to serve the potential mining developments in the Northwest Territories around Great Slave Lake and north thereof; however, a line north from Waterways would be better located to serve known and potential mineral resources along its route in Alberta and existing and potential mineral development in northwestern Saskatchewan, and also the Northwest Territories following the construction of development road from Fort Smith to Fort Reliance.

MR. LEVESQUE: Q. Now, the forestry resources. What procedure was followed in the evaluation of the forestry resources in the areas involved?

A. An evaluation was made of the inventory data provided by the Alberta Government for the area in the Province of Alberta north of the 56th Parallel (see Appendices F-1 and F-2) and of the information provided by the Department of Northern Affairs and National Resources on the timber resources of Wood Buffalo Park.

Exhibit 2 shows the Alberta forest inventory blocks and Wood Buffalo Park in relation to the proposed railway routes.

Q. I believe exhibit 2 is a map of the





areas concerned and showing the blocks which you will be referring to in evidence.

A. Yes. This map here is divided into inventory blocks, and we have considered those inventory blocks which we feel lie adjacent to the railway and hence would be relevant in the construction of a railway, and we have included the data as given by the Department of Forests in Alberta.

Q. How would you describe the forestry resources along the Grimshaw route?

A. The forest inventory blocks which could be said to be associated with the Grimshaw route are 84-D, E, L, M, C, F, K, and N, and the total productive and potential area amounts to around 16.7 million areas. This will be reduced somewhat after the Alberta Government completes a survey of Block 84-E, which suffered two fires in 1950 and 1958 and was more than 50 per cent burned over. Deciduous trees account for about half of the timber reserves and consist mainly of aspen poplar. The productive forest in the inventory blocks adjacent to the Grimshaw route could possibly be exploited for sawn lumber, plywood or pulp operations. However, it is considered significant that relatively few operations are presently underway, even though the Mackenzie Highway provides access to the area and the Peace River Subdivision of the Northern Alberta Railways passes through portions of inventory blocks 84-C and D. Alberta timber reserves







are shown in Appendix F-3.

Using the above-noted inventory data, the indicated annual allowable cuts for pulpwood and saw logs for all blocks are as follows (see Appendix F-4):

Spruce and pine pulpwood - 1,225,000 cords

Spruce and pine saw logs - 242,943,000 f.b.m.

In addition to this, there is a reserve of 120,710,000 cords of deciduous timber, mainly aspen poplar.

Q. How would you describe the forestry resources along the Waterways route?

A. The forest inventory blocks in the Province of Alberta which could be said to be associated with the Waterways route are 84-A and H and 74-D and E, and portions of 84-I and P and 74-L and M. The remainder of these latter blocks are in Wood Buffalo Park, and are considered to be adjacent to this route. The total productive and potential forest area in the Province of Alberta (excluding Wood Buffalo Park), which could be considered as associated with the Waterways route, amounts to around 10 million acres. Coniferous trees account for 56 per cent of the timber reserves in the productive forest. The Waterways Subdivision of the Northern Alberta Railways terminates in inventory Block 74-D.

Q. Would you give an estimate of the forestry resources in Wood Buffalo Park?

A. In Wood Buffalo Park, which is not





included in the above estimates, the Department of Northern Affairs and National Resources has estimated that the total productive and potential forest area adjacent to the Waterways route amounts to around 5 million acres. In this area, there are an estimated 1.85 billion board feet of softwood saw timber, 500 million board feet of hardwood saw timber and veneer logs, as well as 8.7 million cords of softwood cordwood and 2.3 million cords of hardwood cordwood. Alberta timber reserves are shown in Appendix F-3.

Q. Are the timber resources in the park being exploited?

A. Exploitation of the Park's timber reserves is currently underway. The Swanson Lumber Co. has two berths containing an estimated 244 million board feet of spruce and is operating a sawmill. The Denny Logging Co. has a berth containing 125 million board feet of spruce and is also producing sawn lumber. In addition, this company has also announced its intention to construct a plywood plant at Fort Fitzgerald.

Q. What would be the total annual allowable cuts along the Waterways route?

A. The total indicated annual allowable cuts for all inventory blocks in Alberta and the Federal Government allowable cuts in the Park are as follows (see Appendix F-4):





Spruce and pine pulpwood 1,251,000 cords  
Softwood and hardwood saw logs - 386,826,000 f.b.m.

In addition, there is a reserve of  
49,541,000 cords of deciduous timber in the whole area.

Q. What factors will affect the development potential of forestry?

A. The market outlook for lumber is of major importance in assessing the development potential of forestry in Northern Alberta. Present operations, those of Denny and Swanson, produce saw lumber. The physical resources would appear sufficient to support extensive development in the future.

The construction industry is the main user of timber. Rising level of population and per capita income in North America will have important effects on construction activity and hence on demands for timber. According to the Gordon Commission, it has been estimated that both domestic consumption and lumber exports will increase substantially from 1955 to 1980. In the same study it was estimated that the demand for newsprint in Canada was expected to more than double in the same period; this factor should lead to an increase in pulpwood production in Canada.

Q. Which areas have been the major producers of lumber in Canada?

A. In the past the major producing areas in Canada in order of magnitude have been British







Columbia, Quebec, Ontario, and Alberta, while major markets were British Columbia (overseas lumber included here), Quebec, and Ontario. The latter two provinces are the major areas which import sawn lumber from other provinces. Alberta did not ship significant quantities of sawn lumber in the past to Quebec and Ontario.

Q. Will Alberta and the Northwest Territories in the long-term be in a position to compete with these major producers of lumber?

A. The competitive position of producers in Northern Alberta and the Northwest Territories will depend upon the price-cost relationship for them relative to competing areas. Over the long term, it is anticipated that a shift in forest activity in Canada to Alberta and British Columbia from the more eastern areas should take place. Alberta is expected to share more significantly in the growing demand for lumber. The prospects for development of extensive pulp operations would appear favourable, especially in light of substantial increase in demand.

Q. How would you compare the two areas as far as forestry resources are concerned?

A. The forest resources of the whole Northern Alberta above the 56 degrees latitude, including Wood Buffalo Park, are very extensive. In assessing the allowable cut or the gross annual sustainable yield, the Von Mantel formula was used.





This formula is based on the premise of a normal forest, and the correctness of the results varies with the degree that the forest approaches the normal. Since most forests are not normal, the use of the formula is therefore restricted to determining the allowable cut provisionally, before detailed data can be obtained.

Spruce and pine pulpwood - It is indicated that there is a slightly greater annual volume of available softwood pulpwood which would be associated with a railway north of Waterways than one from Grimshaw. It is therefore logical to expect that, if and when pulp mills are considered to be economic in these northern areas, a railway on either route would offer approximately equal opportunities for development.

It should be noted, however, that most of the existing forestry activity on the Grimshaw route, as well as potential development, is centered in an area which is presently served by road and rail. This is not true for the Waterways route where timber stands are for the most part located far from present rail facilities.

Saw log timber - The gross annual sustainable yield of this timber is around 60 per cent greater on the Waterways route than on the Grimshaw route. In addition, two companies are currently operating in Wood Buffalo Park producing sawn lumber,





and it is understood that, with direct-railway transportation, both of these companies would expand their operations.

Deciduous timber - There is a considerably greater volume of deciduous forest on the Grimshaw route than on the Waterways route; however it is indicated that a great part of this is aspen poplar of doubtful merchantability.

It is therefore concluded that a line north from Waterways would be better located to serve existing and potential forest industries than a line from Grimshaw.

MR. LEVESQUE: Now, Mr. Chairman, we are coming to the portion of this brief dealing with population. An examination was made of the number of inhabitants in the area which could be affected by railway from Great Slave Lake over each of the two routes. The results are shown on exhibit 3 and appendices P-1, P-2, P-3 and P-4. Those appendices are self-explanatory and we do not intend to have Mr. Rotstein speak to them any further.

MR. FOUKS: Mr. Chairman, I don't like to interrupt, if the railway would like to finish their brief, but, of course, they have just covered forestry and we have a man here who could deal with forestry. Do you wish to have him available for examination, or would this be an appropriate time?

THE CHAIRMAN: There is quite a sharp







difference of opinion.

MR. FOUKS: Very sharp, Mr. Chairman.

THE CHAIRMAN: I think we might finish the brief.

MR. FOUKS: Very well, Mr. Chairman.

THE CHAIRMAN: While we are here, one question might be worth bringing up, and it is this. I think that you were speaking of some examinations of the forests that have been made apart from those the Alberta and Dominion Governments have made.

MR. FOUKS: We are talking about information we have of the same areas, with a sharp contrast, of course.

THE CHAIRMAN: We will leave it for the moment.

MR. LEVESQUE: The next section is traffic; it starts on page 19 of the brief, terminates at page 21.

Q. Now, Mr. Rotstein, will you speak generally on the procedure you followed to determine what traffic would accrue to both routes?

A. Estimates of traffic which might accrue to both routes have been compiled. These estimates were based upon existing traffic movements where transportation economies and improved service could be expected to attract traffic to rail movement. In addition, probable traffic resulting from the development of Pine Point Mines was included, as well as





that which it is considered will develop from the existing lumber industries in Wood Buffalo Park. No estimates were included covering potential traffic from other undeveloped natural resources.

Q. What is the estimate for the Grimshaw route?

A. It has been estimated that the traffic which would develop following the completion of a railway from Grimshaw to Great Slave Lake would amount to about 360,000 tons of freight annually and would provide gross revenues to the new line amounting to around \$3 million. The source of this traffic would be in the following categories: lead and zinc concentrates from Pine Point, mine supplies for Pine Point Mines, grain from the Peace River area and general traffic to and from the Great Slave Lake area.

Around 310,000 tons of this traffic, however, is common to either route, being tonnage associated with the development of the Pine Point mine and for transfer to barge to points on Great Slave Lake and beyond. The only other traffic which would originate on the new line itself would be an estimated 50,000 tons of grain which the N.A.R. is already receiving at Grimshaw and would provide the N.A.R. with estimated additional gross revenues of some \$16,000.

Q. What is the estimate of traffic for the Waterways route?

A. It has been estimated that the traffic





which would develop following the completion of a railway from Waterways to Great Slave Lake would amount to approximately 440,000 tons of freight annually, and would provide gross revenues to the new line amounting to approximately \$3.6 million. The source of this traffic would be in the following categories: lead and zinc concentrates from Pine Point, mine supplies for Pine Point mines, lumber from Wood Buffalo Park and general traffic to and from the Lake Athabasca and Great Slave Lake areas. The traffic which the railway would anticipate handling to or from points on the line north of Waterways immediately following its completion would therefore amount to around 130,000 tons.

Q. Would you compare those to routes on the basis of traffic?

A. It has been estimated that the Waterways route would produce initially approximately 22 per cent or 80,000 tons more railway traffic annually than the Grimshaw route. In terms of revenue the Waterways traffic would exceed the Grimshaw traffic by approximately \$600,000 annually. Furthermore, while the potential growth in traffic from agriculture on the Grimshaw route may be greater than on the Waterways route the additional exploitation of the forest resources on the Waterways route is somewhat higher, and the potential growth from mining operations is greater on the Waterways route than on the Grimshaw route.







Q. The next section of the brief deals with other forms of transportation, from page 21 to page 23. What other forms of transportation are available in the areas concerned, and how would they asset the railway?

A. It is anticipated that the basic commodity in shipment on a railway from Northern Alberta to Great Slave Lake will consist of lead and zinc concentrates from Pine Point Mines. The railway would expect to move certain goods presently being handled by other transportation agencies wherever transportation costs or improved shipping time are favourable to the railway; this would also be true for future traffic associated with resource development. In effect, the Mackenzie Highway and the Athabasca River-Lake Athabasca-Slave River would be competing transportation facilities.

The Mackenzie Highway, being a main arterial road which would parallel a rail line from Grimshaw, allows truck transport to haul certain commodities on a year-round basis which in many cases may be moved more economically and a better service provided, than in the case of light density railway operations.

The location of a railway from Waterways to Great Slave Lake in relation to existing barge services is shown in Exhibit 4. It will be noted





that it would parallel the waterway. It is logical to expect that a railway from Waterways will supplant most of the existing barge services between Waterways, Lake Athabasca and Great Slave Lake. Certain barge movements could continue such as the services associated with (a) the mining operations on Lake Athabasca and (b) traffic destined to and from the general Great Slave Lake area. In the case of (a) it is indicated that traffic destined for Lake Athabasca would be trans-shipped at Peace Point rather than at Waterways. In the case of (b) general traffic to and from the Great Slave Lake area and beyond would be trans-shipped to barge or vessel at Ile du Mort on the south shore of Great Slave Lake.

Development roads in the area, associated with the Waterways route, are in some cases completed or are in various stages of construction or planning. Exhibit 4 shows the general transportation agencies of Northern Alberta and a portion of the Northwest Territories, and includes the 1959 status of the development roads. It will be noted that the roads associated with the Waterways route are in effect railway service roads, and as such should improve the traffic prospects of the railway. This is particularly apparent for the projected road from Fort Smith to Fort Reliance, which, when built, will pass through a portion of the Shield where





mineral prospects are favourable.

Q. What are your conclusions if a railway is to be built to Pine Point and Ile du Mort on the Great Slave Lake?

A. If a railway is to be built to Pine Point and Ile du Mort on Great Slave Lake, the Northern Alberta Railways conclude that it should be constructed from Waterways for the following reasons:

Resources and Development potential are greater on the Waterways route;

Immediate and potential rail traffic on the Waterways route is greater than could be expected on the Grimshaw route. Traffic on the Waterways route would produce initially approximately 22 per cent or 80,000 tons more railway traffic annually than the Grimshaw route. The initial gross revenues on the Waterways route would exceed those on the Grimshaw route by approximately \$600,000 a year.

Having regard to the existence of the Mackenzie Highway and planned development of highway facilities in Northern Alberta and the Northwest Territories, the construction of a railway from Waterways would make a greater contribution to a balanced transportation network serving these areas than would the construction of a railway from







Grimshaw.

MR. LEVESQUE: That terminates Mr. Rotstein's presentation, Mr. Chairman.

COMMISSIONER GAINER: Mr. Rotstein, there are, of course, a number of very interesting questions that we will want to put to you over the course of time, and I think it is probably fairly evident that in the course of this questioning we would like, if possible, to obtain further details on numerical breakdowns on the way in which the additional traffic is made up on both routes, and the rates assumed and applied. Do you have those calculations somewhere? It would not have to be done immediately?

A. These are calculations which can be made by traffic departments of the Canadian Pacific and Canadian National and we have really offered the total revenue and an indication of the type of traffic which would move. However, I don't know if we could release the actual rates or revenue figures by type of traffic. We could, perhaps, develop an average revenue figure for each route: Say, if we had a revenue figure per ton mile, it would show on a unit of traffic whether the average was higher on one route than the other.

COMMISSIONER GAINER: Would you be able to do that for groups of commodities? It is pretty evident, I think, that in your conclusions certain





types of traffic which have been assumed for one route over the over would yield a greater dollar revenue per ton than other commodities, and somewhere along the line an assumption must have been made about, not the actual freight rate, but an assumed rate that would apply over the new line, and presumably these things are put together into the aggregate. Could we obtain as much detail on that as you feel you can provide?

MR. LEVESQUE: I might say, Mr. Commissioner, that the figures which are contained in the brief were prepared by freight traffic officers. Unfortunately, owing to other commitments, we could not have freight traffic people available to clarify these things and to explain the figures to the Commission. Mr. Rotstein could give you an average on the rates per ton mile, but I do not think it would be right for him to be asked to develop figures as he has taken them from the freight traffic people. To the extent it would not leave the door open to confidential information being given, we could perhaps supply the Commission with certain breakdowns later on.

COMMISSIONER GAINER: From your Traffic Department?

MR. LEVESQUE: Yes.

COMMISSIONER GAINER: You could get the Traffic Department's figures that went into this originally?





A. May I say something here, sir: These are really estimates of what the railways expect they could receive, and the reason that the revenues for the Waterways route are higher both in total and in unit of traffic to be moved is due to the different rates which exists on the Waterways as compared to the Grimshaw route. In general, a higher value traffic will move on the Waterways route than on the Grimshaw route, and because you have a higher value traffic, and in addition the per unit costs are lowered, this would contribute to a more favourable financial situation on the Waterways route.

MR. BALDWIN: May I, Mr. Chairman, as senior Counsel say that I understand that a traffic and economic survey was prepared by the Economic Departments of both railway companies some time ago, and a copy was given to the Department of Northern Affairs. As a matter of fact, I was instrumental, along with other members, in trying to obtain copies of this during the last session of the House of Commons. I understand they deal intimately with this problem, and probably if the railways consent, I am sure the Department of Northern Affairs would consent, and the whole survey could be made available to the Commission.

MR. BOYD: I think Mr. Baldwin is in error there: any such report was made to the Government on a confidential basis. If the Government







want to give it to the Commission, we have nothing to say about that, but it would not come from the railways.

THE CHAIRMAN: If this were done, the railroad would have no objection at this information being discussed at the public hearings?

MR. BOYD: I would not concede that. There is a great deal of information in there which is of a private business nature so far as the railways are concerned, and we don't publish that to the public. I don't know how much of that sort of thing is in there, but I haven't seen a report yet which didn't contain that sort of information.

THE CHAIRMAN: Well, I am afraid we might find otherwise that we would be interested in asking a lot of small questions, for instance as to whether the Crow's Nest Pass rates were applied in the grain calculations, or the domestic rate, which makes some difference to the results of the comparison, and I feel that in the end we would probably end up wanting the whole thing, and we might as well say so at the beginning.

MR. BOYD: As far as wanting it from us, that is the position: it is a confidential report given to the Government, and we certainly could not disclose it, and even if the Government consented we would have to give consideration to parts we would want to keep confidential.





THE CHAIRMAN: Well, those figures wouldn't be too much use to us if we could not discuss them with you and your witnesses at a public hearing.

MR. BOYD: To that extent, anything that specifically the Commission requires and we feel free to give in confidence - that is, without the public - and this doesn't mean my learned friends are not entitled to it or there is anything wrong - but we have to protect our interest in so far as certain factors of the railway operations are concerned. If a specific problem is raised, we may work out something for the Commission.

THE CHAIRMAN: You said at page 20 that with regard to the Grimshaw route you anticipate about 360,000 tons of freight annually: could you break that down - - which is going to produce \$3 million revenue.

MR. BOYD: I think Mr. Rotstein could.

THE CHAIRMAN: Could you break that down and show how much of that is lead and zinc concentrates, and what the revenue is you anticipate from that? You have lumped it together and given us a total tonnage and the total revenue, and you say it is broken up between lead and zinc concentrates, mining supplies, grain and general traffic: can you show us how much of the tonnage applies to each and how much of the revenue it is anticipated will come from them.

A. I can read the tonnages; I have those





available here by type of commodity. Some of them have been mentioned in the brief, if you recall.

On the Waterways route we have lead and zinc concentrates, and the tonnage is 215,000 tons. This would be lead and zinc concentrates moving southwards from Pine Point.

Mining supplies moving northward to Pine Point would be 25,000 tons.

Lumber, we have estimated 20,700.

THE CHAIRMAN: How about grain?

A. On the Waterways we haven't included any grain estimates, seeing there is no grain production.

THE CHAIRMAN: Oh, I am sorry; you have given us the Waterways route?

A. Yes. These traffic rates were given to us by the Northern Affairs, and I am merely going to lump the two traffic estimates together, since I don't know whether they would want to keep this confidential. They might release these if they wish, but the general traffic moving both to Lake Athabasca and the Great Slave Lake would amount to 181,725 tons.







MR. FEEHAN: Is that traffic that is already being carried by the railways to Waterways?

A. At the present time all the traffic moving north out of Waterways moves by the Northern Transportation Company.

MR. FEEHAN: Yes, but what I mean to ask is: Is this 181,000 tons being carried to rail end now?

A. Yes, I believe it is, and furthered from Waterways. It is carried to Waterways by rail -- or, a good portion of it is.

THE CHAIRMAN: And you anticipated a revenue of \$3,600,000?

A. That is right, and it should be added to the 440,000 tons.

THE CHAIRMAN: How do you break down the revenue?

MR. BOYD: There, again, sir, I think we will be running into difficulties. Mr. Rotstein will speak of -- I should not interrupt; Mr. Levesque should speak to it.

MR. LEVESQUE: Mr. Rotstein is not a freight traffic expert, and I would not like him to be submitted to cross-examination of freight traffic matters in regard to which he is not ready to speak. If there is any information which we are in a position to provide the Commission with, and if any specific question is put to us, we will be happy to provide it to the extent that this information may





be capable of being released.

MR. BALDWIN: And be cross-examined on it?

MR. LEVESQUE: I might, perhaps, recall to the Commission the fact that the railways here have taken the position that they are rendering a service to the Commission in an effort towards enlightening the Commission. We are trying to do our best. We have not cross-examined any other witness. To the extent that our witnesses present are capable of being cross-examined and are able to give proper answers then we are ready to submit to cross-examination, but it would be asking too much, I think, to ask railway executives to come back again before the Commission in Edmonton for cross-examination on statements which they may have released to the Commission.

MR. BALDWIN: I would make this observation, that I think everyone who has appeared here has appeared out of a broad sense of public interest and public duty to volunteer what information they can, and I think on that feeling and with that spirit they have all been prepared to submit to cross-examination. The cross-examination has been conducted in a very loose way here. Witnesses have not been cross-examined in the sense that witnesses are cross-examined in court, but they have been cross-examined with the purpose in mind of obtaining broader and more factual information, and I am sure the same spirit that brought the railroads here will induce





them to be prepared to submit to the same kind of inquisition -- and I use that term in its best sense -- in order that further factual information which they might have will be developed.

A. Mr. Chairman, perhaps we can suggest that we give not absolute figures, but give in a relative way the revenue per ton-mile by the transfer of products. Would this be sufficient at the present time? In other words, it will give us an idea of certain commodities which are of high value from the railways' point of view, and will indicate the others which are of low value. We can, perhaps, offer that information in short order, and I think it will be of interest. It will indicate what commodities will really be revenue makers, and those which are not revenue makers, to the railways. If we scaled them and attributed to them their relative worth instead of their actual worth I think we will get over this impasse, and perhaps there will be sufficient information to enable the traffic to be discussed further.

THE CHAIRMAN: Suppose we get this breakdown, and then if there is anything else that the railways can give us that can be filed, and we can consider the situation again from that point of view. Does that satisfy you?

COMMISSIONER GAINER: Well, it is difficult at this stage. Another approach, perhaps, is to put the questions as they come to mind and seem







relevant, and if at this time any of these questions seem to be out of order then, the witness is present, and we can make a record of them and will be able to accumulate them, and then discuss the possibility of getting additional information from the traffic departments.

MR. FOUKS: I find myself in a difficult position in this case. I do not know whether Mr. Boyd included me in that information, or not, that might be submitted to the Commission.

MR. BOYD: No.

MR. FOUKS: Well, Mr. Boyd is kind enough to be honest about it, but I find it difficult for myself, in representing the people I do represent, to accept paragraph (d) of the conclusions without factual information to back it up. I submit it would be necessary from our point of view that we not only get the totals but get them broken down category by category, together with the approximate rate that applies, so that we can determine whether their conclusion is a fantasy or a truth based upon facts. I can appreciate Mr. Boyd's position; information that is confidential should not come to me, but I submit it puts me in a difficult position.

THE CHAIRMAN: Mr. Fouks, do you not think you are going a little bit too far when you use expressions like "fantasy" and "truth"? Have you any reason to doubt the bona fides of any evidence





given before this Commission?

MR. FOUKS: No, Mr. Chairman, but we have no way of checking the information unless we have some of the facts and figures before us. We are offering ourselves to be cross-examined on our information.

THE CHAIRMAN: We may want to go into the question of what conclusions can be drawn from the facts. I am interested in the language that was used.

MR. FOUKS: I am only using it as a figure of speech. I do not think the facts are that far out, but I think I can establish in one case that their mathematics are out, and that paragraph (d) of the conclusions cannot be substantiated.

MR. BOYD: Could we get back to the first principles as to the extent that the railways are here, and why they are here? They came here as requested to tell the Commission publicly what factors were considered in their business -- in the operation of their business -- and in reaching certain conclusions as to the comparative merits of one route against the other. We have said what we have done, but we did not come here with the intention of having everything we do in our business audited and exposed to the public. I think we have told you all that we feel free to tell you publicly, and what conclusion the Commission takes from that is the business of the Commission. Fortunately, it is not our responsibility to make this decision. It is for the





benefit of the Commission to make this decision. It is for the benefit of the Commission that we say:

"This is what we have concluded on the basis of our calculations in the light of our experience as railway operators, and in the light of information as to resources and other factors."

As to submitting (a) to an inquisition or (b) an audit by others who might have different opinions, I do not think that is the function of the Commission in respect to our evidence, and I say that with every desire to be helpful, but I want to clarify our position before the Commission.

THE CHAIRMAN: Mr. Boyd, apropos of what you are saying now, can you tell us whether you can go some further distance with regard to these matters we are talking about? Mr. Rotstein has already given us some breakdown.

MR. BOYD: He mentioned he could give these relative -- I do not know whether I am describing it correctly, but it seemed to me to be of some considerable assistance to the Commission, and I think he is free to do so.

THE CHAIRMAN: Supposing we have that breakdown, we can then review the situation at that time. We may all be satisfied then, and so may Mr. Fouks.

MR. FOUKS: I am prepared to look at it at that time.







THE CHAIRMAN: Yes, let us look at it then before going on any further.

MR. BOYD: I do not know whether Mr. Rotstein has that available now.

THE CHAIRMAN: Is it something that Mr. Rotstein can work up in a matter of ten minutes during an adjournment, or is it something that he can get out for us this afternoon?

MR. ROTSTEIN: We could, perhaps, have it for this afternoon if that would be all right, sir.

THE CHAIRMAN: Would that be satisfactory?

COMMISSIONER GAINER: Yes.

THE CHAIRMAN: That is the question of traffic. Now, there is the question of the forestry items. I gather that all that has been done by the railways is to use the figures which have been published by the governments of Canada and of Alberta.

MR. ROTSTEIN: That is correct.

THE CHAIRMAN: And you have drawn your own conclusions?

MR. BOYD: I believe Mr. Rotstein has said that is so.

THE CHAIRMAN: Now, the Province of British Columbia has an expert on forestry here, and I think he has arrived at different conclusions on the same information.

MR. FOUKS: That is correct, Mr. Chairman.

THE CHAIRMAN: We have been following the





policy that there should be no cross-examination of witnesses except by Commission counsel. Now, I wonder if, perhaps, we cannot make an exception here -- at least, I will suggest this and will hear what you think about it -- and have a short cross-examination by the interested parties. Mr. Fouks, I presume, is most familiar with this, and we might let him cross-examine briefly in connection with the forestry end of it, and the conclusions that Mr. Rotstein has arrived at. Then, Mr. Levesque or Mr. Boyd -- whichever of you wishes to -- can cross-examine Mr. Roethel this afternoon, and I hope we can get from him his conclusions in regard to forestry.

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MR. BOYD: Well, you offered the railway Counsel an opportunity of cross-examining the witness. We have no desire to cross-examine any witnesses.

THE CHAIRMAN: Would you mind if Mr. Fouks asks Mr. Rotstein a few questions?

MR. BOYD: I don't think I have any objection to Mr. Fouks. I am sure he is a very reasonable individual and I expect him to be fair.

MR. FOUKS: Rather than have the cross-examination and break the precedent, I was going to suggest that Mr. Roethel go into the witness box and give his opinions based on the facts on forestry rather than break a precedent.

THE CHAIRMAN: All right. Now, the first thing that was dealt with was agriculture, wasn't it?

MR. ROTSTEIN: Yes, sir.

THE CHAIRMAN: Have you any questions you want to ask about that, Mr. Feehan?

MR. FEEHAN: I haven't any at the present time. I haven't discussed it with Counsel.

THE CHAIRMAN: Suppose we have an adjournment and you can discuss the question as to whether you want any questions asked as to that, and then we will go to forestry and come back this afternoon as to the question of traffic.

We will adjourn now until 11 o'clock.

--- A short recess.







THE CHAIRMAN: Are we ready to go ahead now, gentlemen?

On the question of agriculture, have you any questions, Mr. Feehan, that you want to ask Mr. Rotstein?

MR. FEEHAN: Mr. Rotstein, you have spoken of the potential in the Slave River area for live-stock and cultivation. Have you any particular information on what development there has been along that line in the Slave River area at the present time?

A. The information we have was taken from the publication called "Soil Reconnaissance Survey" put out by the Department of Agriculture in Ottawa. We further visited Dr. Leahy, who is really the author of this publication, and we were informed that at the present time in the Hay River valley there is a production of coarse grains and that the area could provide for the production of livestock.

MR. FEEHAN: Q. Do you know whether or not there is any production of livestock at the present time?

A. I believe - I really couldn't say.

MR. FEEHAN: You have also said that both railroads would bisect the agricultural areas. That is true, is it not, of the Peace River-Grimshaw route, but, according to the map which the railway has given us, it would be some 20 to 30 miles at its nearest point from the Slave River area?





A. I corrected myself; I would say it would bisect and also parallel these areas. I really meant it to parallel the one on the Slave river.

MR. FEEHAN: We have information that the average frost-free days at Hay River would be 88 days, whereas in Fort Smith the average frost-free days per annum would be only 59. I take it that would mean some difference to agricultural productivity?

A. What are those figures again?

MR. FEEHAN: 88 days at Hay River and only 59 days at Fort Smith?

A. Yes. I believe we mention here that the Peace River area has an advantage in frost-free days. We have said that.

THE CHAIRMAN: Where is that evidence, Mr. Feehan?

MR. FEEHAN: I have it on a schedule here. I don't know whether it has been filed, but I believe it has, sir.

MR. BALDWIN: I think the Northern Affairs had it comprehensively.

MR. BISHOP: The table that we submitted in the Edmonton Chamber of Commerce brief does show 59 days at Fort Smith, but more significantly it shows 92 days at Fort Resolution, which is the area we are really concerned with.

THE CHAIRMAN: What page of your brief?





MR. BISHOP: Compared to 65 at Fort Vermillion. This was exhibit 52 G.

MR. FEEHAN: You also mention on page 9 of your brief, the second last sentence, that livestock shipments are expected to continue to move by truck from the Grimshaw area. There has been also evidence given that at least two full cattle trains per week come from Edmonton to the Grimshaw area, and probably an indication that most of the livestock is coming by railway at the present time.

In the light of that information, would you continue on with your statement or would you hold to your statement that most of the livestock is expected to continue to move by truck?

A. I haven't seen your information on the movement of livestock by rail. I would perhaps like to see that, Mr. Chairman.

My information is that livestock movements along the railway are quite small in number and there are significant movements of livestock by truck for the length of the route which parallels the railway out of Grimshaw; that is the route from Grimshaw to Edmonton.

THE CHAIRMAN: You have no further information on it, in any event.

MR. ROTSTEIN: We are developing some information on the movement of livestock out of Grimshaw on the Northern Alberta Railways and we







could have that available, and I believe you have got a very, very limited movement. My first information is that it is a very small movement.

THE CHAIRMAN: We can have that information, Mr. Feehan.

MR. FEEHAN: I was just wondering if he had taken that into consideration in totalling the tonnage which would be moved along the Grimshaw route.

THE CHAIRMAN: In calculating the amount of freight that there might be along the Grimshaw route, have you assumed that there would be no livestock moved over that railway?

MR. ROTSTEIN: Well, this is the realm of potential traffic and, as we have mentioned, we have not put down a figure for potential traffic of livestock.

THE CHAIRMAN: So any livestock which would be expected to come over that route should be added to the estimate you have.

MR. ROTSTEIN: No, I don't believe so. We are speaking about traffic - you see, the essence of the statement here is that livestock can move very economically by truck and, in fact, it is moving at the present time by truck. Therefore, even the construction of a railway north of Grimshaw would not result in any significant movement of livestock by rail. In other words, the truck can





more economically carry the livestock, they are doing so, and there should be no reason to expect movements of livestock by rail if you have a railway extension north of Grimshaw.

THE CHAIRMAN: So that when you were calculating potential traffic as you have on pages 20 and 21 - well, by Grimshaw it is on page 20 of your brief, isn't it?

MR. ROTSTEIN: Yes.

THE CHAIRMAN: - - you have allowed nothing for any livestock traffic.

MR. ROTSTEIN: No, sir.

MR. FEEHAN: I might ask you, too, if your total end figure of \$16,000, which includes the shipment of 1 billion 800 million bushels annually, is calculated on the export charges or on the Crow's Nest Pass charges.

A. I take it you mean the \$1,800,000?

MR. FEEHAN: Yes.

MR. ROTSTEIN: This is calculated on the export rate.

MR. FEEHAN: That would come under the Crow's Nest Pass Agreement, then?

MR. ROTSTEIN: Yes.

MR. BOYD: It is the statutory rate, the export rate.

MR. FEEHAN: Yes, I should have said the statutory rate.





I have nothing further, sir.

THE CHAIRMAN: I would like to ask you one or two minor things, Mr. Rotstein. On page 6 you refer to adverse climatic conditions and flies. Do the black flies cause much trouble as regards to cattle?

A. They are supposed to be an irritative factor. I don't know if they are crucial in the raising of cattle, but they do create limitations. In other words, it makes it more difficult to raise cattle where you have these adverse factors in existence as compared to an area where they do not exist.

THE CHAIRMAN: Have you any special information in connection with this, Mr. Rotstein?

A. As to what this would - -

THE CHAIRMAN: As to how serious it is? For instance, have you the opinion of any cattle expert?

A. Well, the opinion of the Dominion Government Agricultural Department in Ottawa. Their feeling is that these factors, such as climate and flies do limit the production of cattle. They may not be crucial.

THE CHAIRMAN: Is there anything published on it by the Department of Agriculture?

THE WITNESS: No. This is just in discussion with the Department of Agriculture that we received this information.







THE CHAIRMAN: Can you tell us who you discussed that with?

A. Yes. This was discussed with - well, one member of the Department was Dr. Leahy. He was more familiar with both areas, Slave River and Peace River.

THE CHAIRMAN: What you are doing is putting it down as your conclusion after discussion with Dr. Leahy?

A. Yes.





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THE CHAIRMAN: It is Dr. Leahy's opinion that you go by?

A. Yes. To expand that, it is Dr. A.E. Leahy and Dr. F.O. Reid of the Soil Division, Department of Agriculture.

THE CHAIRMAN: They are the ones who spoke of the adverse climatic conditions and the flies and the effect it would have on the raising of cattle?

A. Yes.

THE CHAIRMAN: On page 8 you say at the last paragraph before the question of the comparison, "The outlook consequently is for expansion in Canadian agricultural activity in the years ahead. Much of the growth will be concentrated in livestock and the bulk of the growth will be accommodated by the more southern areas in Canada. This is because of the proximity to markets and increased mechanization and development of a more intensive type of agriculture." That, I presume, is something you have got from agricultural experts?

A. Yes, and in the reading of the Gordon Commission Report on Agriculture there is a discussion of the shifts which are going on in agricultural production. For one, rising per capita income is creating a shift away from the consumption of cereals and into livestock, and the indication is that whatever future demand will have to be met will be met by areas in the more southerly areas -- that is, the prairies -- and would also be met by mechanization and by intensification of the type of





agricultural work that is going on.

THE CHAIRMAN: Is it correct to say that the paragraph I have just referred to in your brief is a summary of the material you have got from the Gordon Commission -- that is your authority?

A. Yes, and also the Canadian Pacific Railway, for its own use, did a study of resource development in Canada. This study was done by a team of experts from Harvard and McGill, and is published for the Canadian Pacific, and their conclusions are similar to the conclusions here. In other words, both agree with the Gordon Commission Report on the future of agricultural development in this country.

THE CHAIRMAN: You speak of this having been published for the C.P.R.?

A. No, this is not published. The C.P.R. really commissioned a group for its own interests to study and try and estimate and forecast the resources developments in Canada, and it was done privately for the Canadian Pacific, and we have used their conclusions as well as the conclusions of the Gordon Commission.

THE CHAIRMAN: They are the same?

A. Yes, in this respect they agree.

THE CHAIRMAN: Do they agree all the way through their reports? For instance, if we read what the Commission said about agriculture, will we be reading the same material as that in the Canadian







Pacific report?

A. Yes, in this instance. Both studies pointed out and arrived at the same conclusions.

THE CHAIRMAN: Is the report of the Canadian Pacific something that has been published?

A. No, it has not been published.

THE CHAIRMAN: Is there any reason for withholding that, or would you let us have a copy of it?

A. It was made, I think, privately for the information of officers of the company, and I just mentioned it in that it doesn't contradict anything the Gordon Commission has said about agriculture in this country.

COMMISSIONER GAINER: Was that study on which Dr. Black was retained?

A. Yes, Dr. Black and Dr. Galbraith.

COMMISSIONER GAINER: And it has been completed, has it?

A. Yes, it has been completed.

MR. BOYD: On this point, in my capacity as a C.N.R. man, even the C.N.R. hasn't seen this study. If you get a copy we would like one.

THE CHAIRMAN: That completes the question of agriculture, does it?

Well, now we come to Mining: are there any questions?

MR. FEEHAN: No questions on mining, sir.

THE CHAIRMAN: That brings us, then, to





Forestry. Your suggestion, Mr. Fouks, was that Mr. Roethel give his interpretation of the information?

MR. FOUKS: That is right, Mr. Chairman.

THE CHAIRMAN: And perhaps, at the same time, his comments on the conclusions Mr. Rotstein has arrived at?

MR. FOUKS: Yes, Mr. Chairman.

THE CHAIRMAN: Would you gentlemen be satisfied if we follow that procedure and let Mr. Roethel from British Columbia speak?

MR. BOYD: Certainly; the gentleman is a witness at any time, but I was wondering why we should interject him now.

THE CHAIRMAN: Well, I thought if what Mr. Rotstein had said was now fresh in the mind of Mr. Roethel, and then what Mr. Roethel says will then be fresh in the mind of Mr. Rotstein, we will be able to see the two of them who have arrived at different conclusions.

MR. BOYD: Will Mr. Rotstein have to listen to what is said?

THE CHAIRMAN: Yes, we would like to see in what respect they agree, also. There will be some common ground, undoubtedly, and also we can see where they disagree.

MR. BOYD: I have no intention of cross-examining any other witness.

THE CHAIRMAN: Is that satisfactory to you,





gentlemen, if we do it that way?

MR. LEVESQUE: Yes, it is. It sort of reminds one of what is called an assemblée contradictoire in the Province of Quebec, where two politicians get on the stand at the same time and try to test their own wits.

THE CHAIRMAN: Well, we are not thinking of that, but we have to face this problem of two conflicting opinions, and we would like to see what we can.

MR. BOYD: Do you want Mr. Rotstein to step down?

THE CHAIRMAN: Yes, and we would like Mr. Rotstein to listen carefully to what Mr. Roethel has to say, and also we would like Mr. Roethel to listen carefully when Mr. Rotstein speaks.

Will you examine him, Mr. Fouks?

MR. FOUKS: No, I will just let him carry on. There will be no question of examining or cross-examining.

MR. ROETHEL: I realize that I am the only forester in the room, so I will try my best to contribute on the part of forestry.

Mr. Chairman, I will give first a few general pictures or an introduction of my impression here on forestry, and expand it a little bit after when I come to the detailed point of the railway brief. I know that last week there was quite a







confusion on forestry since I noted several sets of figures were used by several people from the railway.

MR. FEEHAN: Mr. Chairman, Mr. Boyd has asked that we introduce Mr. Roethel and perhaps give his qualifications.

THE CHAIRMAN: What is your position, Mr. Roethel?

MR. ROETHEL: Registered Forester, British Columbia, and I am with the British Columbia Government for eight years. I have been five years with the British Columbia Forest Service, and three years with the Department of Trade and Industry as a forester. My graduation comes from Munich in 1949, and I was two years as a Bavarian forester.

THE CHAIRMAN: What university was it?

MR. ROETHEL: Munich, Germany, and I got a registered forester in the University of British Columbia.

THE CHAIRMAN: The University of British Columbia?

MR. ROETHEL: Yes.

THE CHAIRMAN: Did you get a degree?

MR. ROETHEL: No. My degree was acknowledged from the other university, and I have been associated with the British Columbia Registered Foresters who are only graduate foresters.

THE CHAIRMAN: What is your degree from Munich?





MR. ROETHEL: The same; graduate forester, B.A. -- the same as here. They have a little different expression, but it is hard to translate.

THE CHAIRMAN: How long a course was it at the university in Munich?

MR. ROETHEL: The same time, four years.

THE CHAIRMAN: Is that sufficient, Mr. Boyd?

MR. BOYD: Yes, I just didn't know who the witness was.

MR. ROETHEL: Coming back to last week, I put a lot of thought on this confusion, and I tried to help you in thinking what is the reason for assuming different sets of figures, and I know you have a set of figures also from the Alberta Government and the Alberta Forestry Department. It is a list with a little map on it, and I would like you to have it. It is the volume acreage figures and two sets of tables.

THE CHAIRMAN: Is this the only copy there is?

MR. ROETHEL: Yes. I haven't got one; I just knew that you had one.

MR. BOYD: I think, Mr. Chairman, if Mr. Rotstein is to be asked about something that is to be presented, he should have a chance of seeing it.

THE CHAIRMAN: When we come to deal with this, will Mr. Rotstein come up here and look at it; and you can come up too, Mr. Boyd or Mr. Levesque.





MR. ROETHEL: If you appraise a forest you can do it different ways, and it has been done different ways in Alberta. There is the MacGregor Report existing, and most of the briefs have referred to that. Some briefs did their own calculations, or got their figures from the Alberta Forestry Service, and one big difference from the British Columbia calculations and the other calculations is that we include in our volume figures only mature timber whereas Alberta Forestry and the MacGregor Report include mature and immature timber. This is very important because someone could say, "The B.C. Forestry has underestimated everything", and this is not so. Actually, we gave you our method on net value and volume, and the Alberta Forestry gives you the gross volume with all existing timber whether it is mature or immature. The methods used have been different too. I know that mostly one formula was used which includes the full volume, mature and immature, and, myself, and in British Columbia, we use the formula which takes the volume of timber and adds on after the immature acreage, which is a different procedure and could end in different results. However, by using the same formula for two areas, actually you should get results in a certain proportion. If the west route has a certain amount of timber which is higher than the one I calculated in our brief in British Columbia, and the east route is higher, it should be in proportion;







it should be in the right proportion. If this is not so, then, something is wrong. Last week when we had a little different opinion and results on the brief, I wasn't worrying much, because I saw that the west route was definitely much higher in volume and in annual allowable cut than the east route.

To explain shortly this annual allowable cut business: the reason why a forest service brings up the annual allowable cut is to secure continuous forestry. It is just a way to estimate how much can be cut so we will have it for hundreds of years. The object is to sustain always a certain supply of timber, not only for five or ten years. For this reason, the annual allowable cut figure is much more important than the cut figure, because it may change.

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THE CHAIRMAN: May I stop you there. You are saying that the annual allowable cut is a more important figure than the total volume?

MR. ROETHEL: Yes, in a forest appraisal.

COMMISSIONER GAINER: And this would automatically include the immature?

MR. ROETHEL: No, it depends on the results of this annual allowable cut. Now, we had a brief here which was recommending the east route, and was prepared by the Department of Northern Affairs. This brief also stated that the west route has more timber and a higher annual allowable cut than the east route, but they had some other recommendations and some other thoughts on it. The railway brief brought a big surprise to me because the railway brief has a 60 per cent higher annual allowable cut on the east route of saw lumber.

COMMISSIONER GAINER: That is Appendix F-4?

MR. ROETHEL: Yes, and it is also mentioned on page 19.

COMMISSIONER GAINER: Page 19, and the figures are in Appendix F-4?

MR. ROETHEL: Yes. Offhand, it was obvious to me that there was something wrong, and I regret that I cannot find what they actually did. I would like to go back with you now to the inventory figures and make a comparison of the inventory





figures of the Alberta Forestry Department which you have on your desk, and the tables in the railway brief, to come to conclusion, because they are out in acreage and volume, and in their estimates of the annual allowable cut they are so far out of line, and they do not indicate how this was received, so we had better try to trace it down and see who was right in the first place, if that is all right with you.

THE CHAIRMAN: You are going to refer to this map?

MR. ROETHEL: To the table, and not the map.

THE CHAIRMAN: Now, Mr. Rotstein, we have only one copy of this.

MR. ROTSTEIN: Yes.

THE CHAIRMAN: Will you come up and look at this with us. We have two extra chairs here.

MR. LEVESQUE: I would suggest Mr. Hossack have a look at it rather than Mr. Rotstein.

THE CHAIRMAN: Yes, and if any of the rest of you want to come up and look over our shoulders then you may do that.

MR. ROETHEL: I would like to refer to Appendix F-3 and check the total spruce and pine. May I point out that this table expresses an existing timber volume?

THE CHAIRMAN: What is this you are referring to -- what table?

MR. ROETHEL: F-3, total pulpwood, spruce







and pine, and it is given in thousands of cords. It is total pulpwoods, spruce and pine, and the result is halfway down and it gives you 57,682.

THE CHAIRMAN: Yes, 57,682. Just a minute; if anybody wants Mr. Roethel to stop will they please speak up. You do not mind that, do you?

MR. ROETHEL: No.

THE CHAIRMAN: Now, the total pulpwood, spruce and pine?

MR. ROETHEL: Yes, 57,682. Would you please check now on your table on the west route from the Alberta Forest Service. The total pulpwoods, spruce and pine ---

THE CHAIRMAN: Where is that?

MR. ROETHEL: The west route is the first page, and it gives it to you here -- I will have to come up too. There is the volume of spruce and pine, so if you add these two together you should get a similar figure.

THE CHAIRMAN: In cords?

MR. ROETHEL: Yes, in cords. Then, also I would like to compare ---

THE CHAIRMAN: We have added those together and they come to 24,496,000.

MR. ROETHEL: Yes. I would like you to realize that this is more than twice as much.

THE CHAIRMAN: That is, instead of 57,682,000?

MR. ROETHEL: Yes.





COMMISSIONER GAINER: It is 57.6 against 24.5.

THE CHAIRMAN: The railway figure suggests a figure twice ---

MR. ROETHEL: Yes, that is all I wanted to point out. It says total sawlogs, spruce and pine, 14 billion -- it is the next column on the same side.

THE CHAIRMAN: Total sawlogs?

MR. ROETHEL: Yes. Now, I would like to come back to the Alberta Forest Service which gives it to you here. You add these together.

THE CHAIRMAN: 7,723,000?

MR. ROETHEL: Yes, that is again twice as much as the railway brief.

COMMISSIONER GAINER: Do these figures attached to the map contain the same inventory blocks?

MR. ROETHEL: Not quite. That is what I come to after. I just wanted to make the statement now. Would you now get the sub-total of the east route? It is the same column; pulpwood and sawlogs. If you come down you find 45,519,000 cords.

THE CHAIRMAN: 45,519,000, and you have 15,599,000?

MR. ROETHEL: No, the Alberta is here now -- yes, you have to add them up again to -- yes, that is right. I would like to point out that this is three times as much, which is important because it is the east route, so if the railway is out by





something -- they have estimated for the west route twice as much, and for the east route twice as much, volume.

THE CHAIRMAN: Does the same thing apply to the sawlogs?

MR. ROETHEL: Yes. The figure for sawlogs is 7,659,608,000 -- that is the railway -- and in the Alberta Forest Service it gives you 2.7 something.

MR. FOUKS: That is more than three times-- no, it is three times.

MR. ROETHEL: Yes, it is roughly three times. Do you agree?

THE CHAIRMAN: Now, Mr. Roethel, I would like to know why these discrepancies occur. Are you going to come to that later on?

MR. ROETHEL: I could do it now.

THE CHAIRMAN: Why are not the figures in the railway brief and those in the ---

MR. ROETHEL: The railway brief takes some larger areas in down here, but I still do not know why they have here three times as much, and here two times as much. I do not get it. I do not know. And as they do not say how they got it that is up to me to find out. I just want to state the facts. They have a higher volume in both areas, but this volume is three times as much and this is two times higher.







THE CHAIRMAN: We have been looking at this statement which has in one case one half and in the other case one third in appendix F-3.

MR. ROETHEL: Yes, and if it wouldn't be out of line, I would ask you to check to see, because in our brief it is exactly the same as it is down here. I would like it to be checked. We have the same figures in the same area as indicated by the Forests Service.

THE CHAIRMAN: What we are looking at and this document we are comparing with the railways brief are figures prepared by Mr. Feehan - -

MR. FEEHAN: I obtained that document which you have in your possession, which I don't think has been marked as an exhibit, from the Department of Lands and Forests.

MR. ROETHEL: Since we had this I asked the Forests Service to give me a translation in cubic feet and you could compare later on the B.C. figures with the statement of the Alberta forests.

THE CHAIRMAN: Can you give us the statement that the Alberta Government gave you?

MR. ROETHEL: I asked them for cubic feet, as this was in board feet, because I thought it would be hard for you to trip me up on my figures.

THE CHAIRMAN: Now, we will ask Mr. Paterson to mark as an exhibit the statement in board feet which Mr. Feehan obtained.





MR. ROETHEL: The area is the same.

--- EXHIBIT NO. 55: Statement in board feet.

THE CHAIRMAN: Now, Mr. Roethel, you have given us another statement which you obtained from the Department of Mines and Forests in Alberta which has translated the figures on exhibit 55 into cubic feet.

MR. ROETHEL: Yes. This gives you the mature volume, and this gives you the end immature.

THE CHAIRMAN: This will be exhibit 55 (a).

--- EXHIBIT NO. 55 (a) Conversion of figures on exhibit 55.

THE CHAIRMAN: This is exhibit 55 (a).  
Now, how did you distinguish between these two exhibits?

MR. ROETHEL: One gives you the total mature volume in board feet and cords.

THE CHAIRMAN: Total mature volume?

MR. ROETHEL: The mature and immature volume in board feet and cords, and the next one gives you the total mature volume only in cubic feet, and these are the conversion factors, so that everyone can check it.

THE CHAIRMAN: You have obtained only the mature timber.

MR. ROETHEL: Yes, because we used in our formula only mature timber.





THE CHAIRMAN: Would you mind coming and demonstrating this. Now, the first figure you gave us was the pulp wood along the west area in exhibit 55.

MR. ROETHEL: Yes.

THE CHAIRMAN: That is mature and immature.

MR. ROETHEL: Yes.

THE CHAIRMAN: Where does it appear on Exhibit 55 where the mature timber is?

MR. ROETHEL: It doesn't show. They don't have a breakdown.

THE CHAIRMAN: Well, if they haven't got a breakdown, how can they tell how much is immature?

MR. ROETHEL: You could ask for a breakdown. This is the breakdown of mature.

THE CHAIRMAN: Now, the railways' brief refers to mature and immature.

MR. ROETHEL: Yes.

MR. HOSSACK: It suits the British Columbia Government.

MR. ROETHEL: It suits someone else in Alberta as well.

MR. HOSSACK: We used the Von Mantel formula because it was recommended to us by the Province of Alberta.

MR. ROETHEL: I think any formula is







all right because you do get the same results.

MR. ROTSTEIN: What is the purpose of using only mature timber?

MR. ROETHEL: You can take any formula you like to establish.

MR. ROTSTEIN: But he is just using the basis of mature timber.

MR. ROETHEL: It is considered, but it would take too long to explain the Hanzlik formula.

MR. ROTSTEIN: Would you give us an idea?

MR. ROETHEL: The Hanzlik formula takes the mature volume and adds the annual allowable per acre of every immature acre. It takes the mature volume and divides it by the rotation age and adds the growth of one acre of the immature stock. That is one way to do it. The Von Mantel formula takes the total growing stock and divides it by rotation. That is, we have so much and we have done it by rotation, and the Hanzlik formula divides it up. We have every acre of immature stock, which might be quite a high figure, and we found this formula was more realistic, not only for B.C. - we have some similar areas in B.C., Ontario and Alberta. We found it more realistic. It might show up here a little bit conservative, but since I used the Hanzlik formula for east and west, I think we are fair in using our approach and not using the approach which





has been used so often. We thought if we approached the thing from a different angle, different formula, we could help you more with it. It was quite a bit of work; it would have been easier to copy from something else.

THE CHAIRMAN: How do you spell that?

MR. ROETHEL: H-A-N-Z-L-I-K.

THE CHAIRMAN: And Von Mantel?

MR. ROETHEL: V-O-N M-A-N-T-E-L.

THE CHAIRMAN: The Hanzlik formula emphasizes mature, does it not?

MR. ROETHEL: In my opinion it brings up the immature as well.

THE CHAIRMAN: It emphasizes the mature and brings up the immature.

MR. ROETHEL: Yes, put it that way.

THE CHAIRMAN: And the Von Mantel formula takes the total growth and then makes an allowance for the immature.

MR. ROETHEL: Yes.

COMMISSIONER GAINER: The type of formula used has nothing to do whatever with the - -

MR. ROETHEL: No; you could use anything - you could use a percentage formula which has been used by the Department of Northern Affairs. As I said before, the formula has nothing to do with it.

THE CHAIRMAN: A percentage formula is used by the Department of Northern Affairs?





MR. ROETHEL: Yes, a special formula -  
Wood Buffalo Park.

May I turn now to appendix F-4. On this page I am only interested in one figure, actually, which is towards the end right-hand side of the page - sawlog, spruce and pine, and if you take that last column you have on Wood Buffalo Park, 250 million board feet. I do not necessarily agree with the results of the total sawlog and total pulp wood for both routes since they seem to be high compared with the Department of Northern Affairs' brief, which used the same formula, but I object very strongly against this 250 million. I turned it any way I could; it is just out of line, it is just wrong. I thought at first it could be a typist's error, but I think the railway brief carefully prepared it. I don't know what is wrong, but I would like to prove how it is wrong.

COMMISSIONER GAINER: Before you have the formula for allowable cut, would not the same relationship show up in regard to Wood Buffalo Park on appendix F-3?

MR. ROETHEL: No; I didn't necessarily disagree with it.







COMMISSIONER GAINER: You don't recall that these figures also seem high relative to the total stock?

MR. ROETHEL: I didn't make a comparison on Wood Buffalo Park with the Forestry Department of Alberta since they haven't got the figures.

COMMISSIONER GAINER: I can't recall that in the Northern Affairs' brief were there any figures presented for the total stock in Wood Buffalo Park.

MR. ROETHEL: No.

THE CHAIRMAN: Just the allowable cut.

MR. ROETHEL: It is just the allowable cut. As I said before, sir, annual allowable cut is an important thing to realize in this comparison, not necessarily the volume. Also the volume is in proportion to the annual cut. If the volume is high in the east, usually the allowable cut is high in the east, too, but I wouldn't necessarily say you could go on it because there are quite a few factors. This is actually the figure which should be followed in a management plan and should be cut.

THE CHAIRMAN: Is this the situation, that it is conceivable that you might have a large volume in some place, but it is so immature that there is no annual cut allowed at all?

MR. ROETHEL: No.

THE CHAIRMAN: Perhaps it is very unlikely, but is it conceivable?





MR. ROETHEL: Would you ask that again, please?

THE CHAIRMAN: Is it conceivable that you might have a large forest where no annual cut is allowed because it is so immature?

MR. ROETHEL: Yes. The annual cut is only allowed if it is mature. I don't think anyone in Canada is cutting immature timber; we all wait until it is mature and you increase your cut as the timber is growing with you.

THE CHAIRMAN: Is it so that a proportion of the timber can be cut where it is mature, whereas that which is immature must be left to grow up?

MR. ROETHEL: Yes.

THE CHAIRMAN: In the Wood Buffalo Park there are two large blocks of timber, practically all of which is mature and over-mature.

MR. ROETHEL: May I object, sir? That is not true. We are very lucky to have the thesis here of Mr. Thorp which gives you a detailed picture of the park only and especially of the two blocks you are talking about. He gives you the acreage of mature, 100,000, and the immature, also something around 100,000. He says the mature and immature is about equal.

THE CHAIRMAN: Perhaps I am causing you to digress, but when he says that the acreage is about





equal, I gather the impression that the Swanson Lumber Company is saying that there is a block of land - I have forgotten the size of it - practically all of which - practically all the timber in that block is mature and over-mature. There are other blocks of land which has immature timber on it.

MR. ROETHEL: Yes. This may be so all over the world, where you get mature timber beside immature timber. This is absolutely right, but you cannot take one block out and forget about it; you have to handle it as a management unit, which has been done in this thesis.

MR. FOUKS: I will file that as an exhibit, Mr. Chairman.

--- EXHIBIT NO. 55 (b): Management recommendations for timber lands along the Peace River within the Wood Buffalo Park (Thorp)

MR. ROETHEL: To go back to the 250 million, we did quite a bit of work on Wood Buffalo Park, because we considered this would be a point of interest, and we came to the conclusion after my calculations that the annual allowable cut would be around 39.6 million board feet.







THE CHAIRMAN: You conclude that instead of it being 250 million it should be 39 million?

MR. ROETHEL: Well, one moment. I would like to try to make a comparison. His result is that he suggested an annual allowable cut of 26 million board feet. My own calculation gives 39.6 million, and the brief of the Department of Northern Affairs speaks of 50 million board feet.

THE CHAIRMAN: This is the annual allowable cut, and the railways calculate it to be 250 million?

MR. ROETHEL: Yes. So, actually, the comparison shows very clearly they must be mistaken. But I would like to also prove it in relation to the volume of saw timber.

THE CHAIRMAN: Well, I think we will adjourn now.

MR. BALDWIN: May I say, Mr. Chairman, that I was looking up Mr. Hamilton's evidence, and on page 106 of Mr. Hamilton's evidence of the Swanson Lumber, he gives 40 million feet. It is on page 106 and 108, in volume 3 of the transcript, and Mr. Hamilton gives first a suggestion of 40 million feet if the railroad could be built, but on page 108 he suggests an annual production in that area of 50 million feet.

THE CHAIRMAN: Well, the annual production may be a different thing from the allowable cut.

MR. BALDWIN: Yes, but I noticed you were





taking figures down and I thought I would refer you to Mr. Hamilton's evidence.

THE CHAIRMAN: Thank you very much. Did Mr. Hamilton deal with an allowable cut?

MR. BALDWIN: I think that question was asked of someone, and I was looking for it. Possibly after lunch I will have found it.

THE CHAIRMAN: If you would look and see, I would appreciate knowing.

MR. BALDWIN: Yes; I think he made a statement.

THE CHAIRMAN: Before we adjourn, can we have a few minutes discussion about our agenda from now on. I apologize for getting it too badly crowded.

Dr. Hume, you very kindly told us you would find it convenient to be here tomorrow as well as today?

MR. HUME: Yes, sir.

THE CHAIRMAN: And the Denny Lumber Company brief we will have tomorrow.

You are anxious to have an adjournment, Mr. Fouks, tonight?

MR. FOUKS: Depending on how long the railroads will take. Mr. Roethel is nearly finished, subject to cross-examinations both ways.

THE CHAIRMAN: I think we are prepared to do what we can to get through today.

Mr. Guest, you will find it convenient to





come back next week?

MR. GUEST: Yes.

THE CHAIRMAN: You, Mr. Roethel, will not find it convenient?

MR. ROETHEL: No, I have a very important job in Victoria.

THE CHAIRMAN: All you gentlemen of the railway companies are very anxious to get away tonight?

MR. BOYD: Well, we hate to leave Edmonton, but we would like to get away.

THE CHAIRMAN: Are there any others waiting to be heard?

Well, we will go on after lunch with Mr. Roethel, and then we will come back to your brief. Also, I think we would like to ask Mr. Jewitt another question or two: do you intend to be here this afternoon?

MR. JEWITT: Oh, yes.

THE CHAIRMAN: Well, we will adjourn now until quarter to two.

---Whereupon the hearing adjourned at 12.15 p.m.  
until 1.45 p.m.







---On resuming at 2.15 p.m.

THE CHAIRMAN: Mr. Roethel, you were going to explain your reasons for disagreeing with the calculation of 250 million feet.

MR. ROETHEL: Yes. My last explanation was based on a comparison of figures created by the B. C. Government and the Department of Northern Affairs, and by the railway brief. You will remember I quoted the figure of 26 million as the annual allowable cut; I quoted my own figure of 39.6 million; I quoted the Department of Northern Affairs' figure of 50 million, and the figure in the railway brief of 250 million. If you compare those figures you will see that obviously something is wrong, and I tried to trace it further, and I would like to draw your attention to Appendix F-3, and to the last line dealing with Wood Buffalo Park, and the line above that. It is the total saw-log, spruce and pine in thousands of board feet. These are the volume figures that the railway brief produces, and it quotes 1,850,000 mfbm, which is over one billion board feet. If you take -- I am sorry, but I have not got the proof of how they got these figures, but I went one step further and tried to find out how they got the comparable figure to this figure. If you take the figure above, which is the sub-total for the east route, you get 7,659, ---

THE CHAIRMAN: Where is that?





MR. ROETHEL: It is the sub-total for the east route.

THE CHAIRMAN: Yes, 7,659,000,000.

MR. ROETHEL: Yes. I think I explained good enough before that these figures are not good enough for the annual allowable cut, and this figure of ---

THE CHAIRMAN: Would you mind waiting for a moment. I would like to make a calculation. Appendix F-3 contains the figure of 7,659,000,000 which gives an annual allowable cut of 136,000,000?

MR. ROETHEL: Yes, that is correct. If you take now Wood Buffalo Park, I would like to say this is about 1.8 per cent of the total, which is a little bit high to me, but it could probably be accepted. That is their own method, and I would not interfere at all, but I hope they used the same method for the park as I think they should, and if so we come up with a percentage of 11 per cent by converting 1,000,850,000 to 250,000,000, so, actually, before even -- everybody who knows something about figures knows that ---

THE CHAIRMAN: It is a little over 11 per cent.

MR. ROETHEL: Yes. My point is that this figure is wrong, and it should read -- if you would apply the same 1.8 per cent of the total volume of the park, as they indicate here, the outcome instead of being 250 million will be 32 million, which sounds





reasonable. If you add this up to the existing east route total of 136 million you would get 168 million, and there we are again comparing the 169 million with the 243 million they give you for the west route. That leaves 40 per cent more for the west route, and not 60 per cent more for the east route as they claim in their brief.

THE CHAIRMAN: Forty per cent more?

MR. ROETHEL: The annual allowable cut is about 40 per cent higher.

THE CHAIRMAN: Is that everything, both pulp-wood and ---

MR. ROETHEL: No, we just talked about saw timber. I did not look at anything about the pulp-wood, or anything. The big error is 250 million feet of saw timber. In this respect, with this 250 million I have nothing to say, but I would like to make a few remarks on the park itself.

THE CHAIRMAN: Before you come to that may I ask you this, Is there any difference in your figures and the figures of the railway companies with regard to the annual allowable cut outside of Wood Buffalo Park?

MR. ROETHEL: One thing I see here ---

THE CHAIRMAN: This is just saw timber at the moment, Mr. Roethel?

MR. ROETHEL: Would you ask the question again, please?







THE CHAIRMAN: Are you satisfied with the comparison figures with regard to the saw timber ---

MR. ROETHEL: Outside the park?

THE CHAIRMAN: --- and the annual allowable cut? Yes, outside of the park.

MR. ROETHEL: That is a hard question to answer, my lord. If I could give you a comparison on the east route, the Department of Northern Affairs gives you 52 million of saw timber outside the park.

THE CHAIRMAN: Fifty-two million?

MR. ROETHEL: Yes. The figure might be higher, and we could say 74 million.

THE CHAIRMAN: This is on the east route?

MR. ROETHEL: Yes. The railway brief gives you 137 million.

THE CHAIRMAN: The Department of Northern Affairs gives how much?

MR. ROETHEL: Fifty-two million.

THE CHAIRMAN: That is, outside the park?

MR. ROETHEL: Yes, and the railway brief gives you 137 million, which sounds high to me, but I did not necessarily disagree with it. That may be based on their own method.

THE CHAIRMAN: What does the Province of Alberta say?

MR. ROETHEL: The Province of Alberta has not got -- one moment, please. I have not got it here, but ---





THE CHAIRMAN: Would you like to see these figures?

MR. ROETHEL: No, they did not quote any annual allowable cut -- the forest service does not quote any annual allowable cut; they just give you the volume figures and the area figures.

THE CHAIRMAN: Now, for the west route what has the Department of Northern Affairs got to say?

MR. ROETHEL: For the west route, the B.C. figure is 213 million.

THE CHAIRMAN: B.C. is how much?

MR. ROETHEL: Two hundred and thirteen million.

THE CHAIRMAN: Yes?

MR. ROETHEL: The Department of Northern Affairs is 141 million.

THE CHAIRMAN: Yes?

MR. ROETHEL: And the railway brief, which is actually quite obvious, is 243 million. That is quite close to the B.C. figure.

THE CHAIRMAN: Two hundred and forty-three million?

MR. ROETHEL: Yes. What appeared to me was in the west we agree somehow but in the east we do not at all because the figures jump up sky high.

THE CHAIRMAN: You say B. C. says 213 million and the railway says 243 million?

MR. ROETHEL: Yes.





THE CHAIRMAN: And the Department of Northern Affairs' figure is down to 131 million?

MR. ROETHEL: Yes.

THE CHAIRMAN: Now, what does B. C. say about the east route outside the park? I missed that.

MR. ROETHEL: Seventy-four million.

THE CHAIRMAN: How do the figures of the Province of Alberta for total timber compare with these? Do they show more for the west than for the east?

MR. ROETHEL: Of course, yes. They show twice as much in volume.

MR. FEEHAN: Mr. Chairman, I think an explanation should be added to that. They show twice as much for the areas outside the park, but it is less than twice as much if you add the park onto the east route.

THE CHAIRMAN: Yes. Are you going to deal with pulpwood later on, Mr. Roethel?

MR. ROETHEL: No, we did not have any special consideration or objection against pulpwood. Generally, the Department of Northern Affairs' figures and the railway brief figures somehow are a little closer, and are higher than the B. C. figures, but we thought that as this is based on a different use of formulae, and also the Department of Northern Affairs and the railway give you gross volumes while we tried to give you net volumes, we would not worry about them. Being a







forester, I think if you have twice as much pulpwood in an area which should have three, four or five pulp mills I do not think we should be too much concerned with how much more it is now, as long as it is in a certain proportion. I mean, for my thinking it would not matter too much if the figure was 1,225,000 or 1,425,000 cords on one side or the other side as long as the proportions are right, because in the inventory of pulpwoods there may occur rather generous mistakes by reason of not knowing exactly how much is in the area. Some estimates of pulpwood are much higher today than are the estimates of saw timber -- may I put it that way -- so this is a case where you could fight on it. As long as it is in proportion, I agree.

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THE CHAIRMAN: I don't know what the Department of Northern Affairs said, but Mr. McNab thinks that there is enough pulp to supply two pulp mills at about 450 tons a day.

MR. ROETHEL: Yes. As I recall, my own estimates, which proved to be conservative, show room for four pulp mills in the north.

THE CHAIRMAN: North of Grimshaw?

MR. ROETHEL: Yes.

THE CHAIRMAN: Room enough for four pulp mills?

MR. ROETHEL: Of course, if I may draw your attention to my own brief section, forest appraisal, page 33, it estimates the pulpwood supply, annual allowable cut, 69.4 million cubic feet, which would be for a consumption of pulpwood of 15 to 20 million cubic feet per year, which would have room for four to five pulp mills.

THE CHAIRMAN: That is four to five pulp mills at 450 tons a day.

MR. ROETHEL: 500 tons a day.

THE CHAIRMAN: And that is all north of Grimshaw, is it?

MR. ROETHEL: Yes, that is all north of Grimshaw.

THE CHAIRMAN: And what do you estimate the pulp along the eastern route would be?

MR. ROETHEL: On the eastern route, in-





cluding the Park, on page 34, it amounts to 34.7 million cubic feet, which would have room for two pulp mills.

THE CHAIRMAN: Mr. McNab, as I recall it, gave us figures just half of yours - two pulp mills on the west route and one on the east route.

MR. ROETHEL: I think from discussion this was from reconnaissance; he hadn't covered that area, he just spoke of it. So he gave you north of Grimshaw, and he was careful to say there was probably room for two. But I think if it came down to figures he would agree, and I think he stated some time that in his opinion there was at least twice as much pulp in the west as in the east, and, of course, at least twice as much opportunity. I think he said one in the east.

MR. McNAB: One.

THE CHAIRMAN: Is that outside the Wood Buffalo Park, Mr. McNab?

MR. McNAB: No, that included the whole eastern area - one pulp mill.

THE CHAIRMAN: You can only see half as much pulp along the eastern route as Mr. Roethel can.

MR. McNAB: Quantity is actually one factor, but the areas where the mill can be established to, let's say, get economic pulp out of the area would, in my belief, be one mill. You could have pulp scattered over a large area and it still wouldn't be economic to get into the area to get it out.







THE CHAIRMAN: That is because it is so badly scattered.

MR. McNAB: It costs too much to get it to the mill.

THE CHAIRMAN: Mr. Roethel is concerned with the absolute volume; you are concerned with the economic volume.

MR. McNAB: Yes.

MR. ROETHEL: I doubt if it will ever be economic to harvest it outside of the park, and I think the Forestry agrees with this statement.

THE CHAIRMAN: Mr. McNab, do you agree with Mr. Roethel's advised estimate of the possibility of four to five pulp mills along the west route?

MR. McNAB: I would say it would be a difficult thing to say right now. We could safely two would operate economically in the western area north of Grimshaw, but - well, there is a possibility of more, but without further decided inventory study, I wouldn't say. I would say two safely, possibly more. But without further study, I don't think it is safe to say there is timber sufficient to supply them. If it is in the right place, certainly there would be more mills in there.

MR. ROETHEL: May I just add some little thing on over-mature timber, Mr. Chairman?

THE CHAIRMAN: Yes.

MR. ROETHEL: Because the last time you





asked me the question came up about the over-mature timber in Wood Buffalo Park and I had talked with Mr. Thorp meanwhile who did this professional thesis on Wood Buffalo Park. I would like to mention that if some forester is doing a thesis it is not a matter of a month's work, it is usually over half a year, and we couldn't get it accepted from the official body if you are not in the area. Mr. Thorp was in the area for two years; he was with the Department of Northern Affairs by this time, and he didn't know that this argument would come up; it was written in 1957, or somewhere. I talked to him about this problem in the park and the over-mature timber and the question of how urgent it was to be logged, and he gave me a suggestion - it is in the thesis - that some over-mature timber is in the park. I would like to mention it. He said it would be around 15 per cent. Now, 15 per cent over-mature timber within a mature area is not out of the world, and I would say it could be quite normal you could find it all over the place. I spoke to the Alberta Forestry people and they assured me that in the west route there is at least as much over-mature timber as quoted to be in the east route, at least more than 15 per cent. They gave me an idea, probably without doing too much - they said they didn't know offhand, but they said five times as much as in Wood Buffalo Park in the total west route as compared with the Wood Buffalo Park; that is over-





mature timber.

I would like to prove this 15 per cent of over-mature timber by this map.

THE CHAIRMAN: Who did you speak to?

MR. ROETHEL: With the head of the Survey Division and with the head of the Management Division, Mr. Finch and Mr. Smart, and they told me, of course, it would need a further survey to make up the exact estimate. I suspected that there would be some over-mature timber.

May I present the map to give you an idea in quantity. You will find it rather alarming. As you see, the timber in Wood Buffalo Park, the saw timber is always close to the river bottom; it is the only chance it could exist - benefiting from the sediments and being protected by so much swamp around so that it couldn't burn so easily. Mr. Thorp in the thesis mentions the areas in black which are getting cutting priority. He says within a long management plan, if you have over-mature timber which is still merchantable, you give it the first consideration. This block is the first 5-year and this block is the second 5-year and this is the third 5-year. They are in blocks, as you see, but it wouldn't be an alarming thing. In the way of forester's education, you cannot cut it in a year, so you have to put it in a long-term plan, and I don't think it will do any harm. If it survived that it will survive another ten years.







These maps go with the thesis, but I am not the authority which keeps the maps. I think we could get copies of the maps and copies of the thesis.

THE CHAIRMAN: You are looking at two maps prepared by Mr. Thorp.

MR. ROETHEL: Yes. He just gave it to me for further demonstration. We will supply you with copies exactly as they are here.

THE CHAIRMAN: We can have the thesis?

MR. ROETHEL: Yes, or a copy.

I believe I have covered about everything I wanted to say from my side.

I would like to draw your attention again to the big picture of the forest on the west and on the east, and I think I could convince you, and I think you know now, by facts, that the west route has certainly much more timber, in saw timber and in pulpwood; just quantity and annual allowable cut. If you think of a long-term management, this annual allowable cut is the basis for it, and also I think a long-term management is out of the basis for a railway. So if you have more saw timber in the west and more pulpwood, I think that other questions should be by now answered, and I think certainly more industry will come into the area as well - it must be. If you have any development, it started in the south and it didn't - if there was one mill ready or not, the timber will be cut; and definitely this route has, in this respect,





all the advantages.

If there are any questions, I am ready to answer them.

MR. FEEHAN: No questions, sir.

MR. BOYD: No questions, sir.

MR. ROETHEL: Pardon me, I didn't expect that the gentlemen from the railway wouldn't ask me anything. May I ask one question just by pure - I would like to know how they got this 250 million.

MR. LEVESQUE: This will be answered in due course.

MR. ROETHEL: You don't know offhand?

MR. LEVESQUE: The witness will answer your question in due course.

MR. BOYD: We don't mean to be insulting by not asking him any questions.

MR. BALDWIN: Mr. Chairman, you will remember before lunch I asked you if, with respect to this aspect, I might make an observation. I am perfectly prepared to wait, but it is an observation as to the questions that have been raised.

One particular point is on page 15 of the railway companies brief, and precisely the same wording appears on page 9 of the brief of the Commissioner of Northwest Territories. It says: "It is considered significant that relatively few operations are presently underway, even though the Mackenzie Highway provides access to the area and the Peace River Sub-





division of the Northern Alberta Railways passes through portions of inventory blocks 84-C and D".

Just about an hour before I left Peace River I was able to see for the first time the Peace Forestry Officer of the Peace River Forestry Division. He gave me this list of names, which I would like to put on the record of companies which are operating in the area north of Grimshaw. This has nothing to do with the area covered by the Peace River Sub-division of Northern Alberta Railways.

Swanson Lumber Company; Imperial Lumber Company. Mr. Ken Fischer gave evidence, I think, at Peace River and I think he intimated that he has a very substantial operation. Ken Mitchell, whose saw mill is at Notikewin; H. N. Smith and Company, Northwest Lumber Company. Within the last year the High Level Lumber Company have been allotted a berth and I think are going to engage in operations there now. High Level has already been referred to in the area just northwest of Fort Vermilion. Both Fischer and the Northwest have applications which will be dealt with as soon as the Forestry Division in Peace River can provide the officers to do it.







At Steen River there was a company which had been active there -- the Steen River Lumber Company, and that has been taken over by the North West. I think that is about 230 miles north of Grimshaw. Commissioner Thompson may know the distance. I don't have the exact figure, but it is a fairly long distance north of Grimshaw. The La Crile Sawmills operate in the Fort Vermilion area, and Mr. Gauthier, the Chief Forestry Officer, said that Mr. Mayhew of the Western White Spruce Company, which has one of the largest mills at the Hines Creek area, which is the westerly terminus of the Peace River subdivision, have applied for a berth in that area. Mr. Gauthier made this comment, that the companies now operating in Hines Creek are, in several instances, coming close to the economical limits, geographically, of where they can operate to the north. There are no roads, nothing other than forestry roads, going straight north from Hines Creek. The area where he estimates they will have to go is an area west of where the proposed railway will go to the north, and, in his opinion, a railway to the north would probably lead in due course to the changing of the operations of some of the companies to a point along the railway north of Grimshaw where they would have economical access to the timber which now takes them a very considerable distance along difficult roads to reach.





THE CHAIRMAN: I think the evidence given at Peace River is that there is now about 30 million per year being taken out of that area.

MR. BALDWIN: Yes, 30 million, and I think Mr. Hamilton said  $5\frac{1}{2}$  million are being barged out of Wood Buffalo Park. I think Mr. Hamilton said that the rate by barge was \$6.60. I think that is in his evidence, which is at page 114, volume 3, of the evidence. They are paying \$6.60 to barge it out. Evidence was given by the people at Peace River that the approximate rate from a distance of 110 miles north of Grimshaw was \$7 a thousand. That shows that \$7 a thousand is bringing out 30 million to Grimshaw, and \$6.60 a thousand by barge -- there are other distinctions, but I would like that statement to be before you.

THE CHAIRMAN: Mr. Rotstein, we would like to ask you some questions. Are there any questions you want to ask?

MR. ROTSTEIN: No.

THE CHAIRMAN: Mr. Levesque, would you like to examine Mr. Rotstein?

MR. LEVESQUE: Yes, Mr. Chairman.

BY MR. LEVESQUE:

Q. The figures contained in the N.A.R. brief have been questioned, and it appears that you are in a position to justify the figures which appear in the appendices, and I intend to file these as an exhibit. This will be the letter dated August 31st





from the Department of Northern Affairs which Mr. Rotstein will use for the purpose of showing how the figures appearing in the brief have found their way there.

THE CHAIRMAN: Have you any extra copies of it?

MR. LEVESQUE: I haven't, Mr. Chairman, I am sorry. It is just a machine copy.

THE CHAIRMAN: Well, we can do with that what we have been doing with this other material: we can put it on the desk and look at it.

MR. LEVESQUE: Could I have it marked as an exhibit?

THE CHAIRMAN: Yes.

MR. LEVESQUE: Perhaps I could read it and incorporate it in the record.

---EXHIBIT NO. 55: Letter dated August 31, 1959,  
from the Department of Northern  
Affairs.

THE WITNESS: The information which we have in our appendices for the Wood Buffalo Park is taken from this information received by us from the Department of Northern Affairs, Natural Resources, and in it there is an indication of the timber volume that exists in the Wood Buffalo Park.

THE CHAIRMAN: Would you read the letter?

A. It is addressed to Mr. Glenn Hossack.

"After your visit to this office the







figures for timber volumes in the Wood Buffalo National Park were re-examined and the information hereunder summarizes the situation to the best of our knowledge to date.

Timber Volumes

Softwood

Saw Timber	1850 million board feet
Cordwood	8.7 million cords

Hardwood

Saw Timber and veneer logs	500 million board feet
Cordwood	2.3 million cords

<u>Equivalent Volumes in Cubic Feet</u>	<u>Million Cubic Feet</u>
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Softwood

Saw Timber	370
Cordwood	750

Hardwood

Saw Timber and veneer logs	100
Cordwood	200

1400

"The estimated potential productivity of the area remains at 50 million cubic feet of timber and 220,000 cords of smaller material annually, provided all the forested area can be made accessible.

"You will note that the total cordwood figure, hardwood and softwood, is 11 million cords. I have confirmed that the 18 million cord figure which you used in an earlier report applies to Wood Buffalo National Park plus all





the area lying to the north as far as Pine Point."

Now, with regard to the question of the 250 million feet board measure, this is a conversion of the 50 million cubic feet mentioned here as an allowable cut, the conversion being 5 feet board is equal to one cubic foot -- a ratio of one to five; hence, by converting the 50 million cubic feet we arrive at our figure in Appendix F-4 of 250 million feet board measure.

THE CHAIRMAN: So that is how you have arrived at that figure?

A. Yes.

THE CHAIRMAN: You have no information beyond what is contained in that letter?

A. That is all, sir. They have given us the inventory figures and converted it to the best of their knowledge, and we have used the information as given to us.

COMMISSIONER GAINER: They have converted the inventory figure using some formula to the allowable cut figure of 50 million cubic feet, is that it?

A. I think the conversion is 5 fbm's equals one cubic foot.

COMMISSIONER GAINER: But they must have gone from the total inventory figure of 1,800,000,000 to an allowable cut of 50 million cubic feet; is that it? Never mind the "board" and "cubic"; it is just that somewhere along the line a formula has to be used?





A. Yes, they use their own formula.

COMMISSIONER GAINER: Do you know what one that is?

A. No, I couldn't say.

COMMISSIONER GAINER: Because that particular conversion is still at variance with the others, isn't it?

A. I really can't say whether they used the Von Mantei we don't know the formula they used.

MR. FEEHAN: Mr. Rotstein, the Northern Affairs have given us 50 million board feet, and apparently they have given you 50 million cubic feet: do you think there could be an error there?

MR. FOUKS: That is the only answer.

MR. ROETHEL: That is the answer.

THE WITNESS: I can't rule it out.

MR. FEEHAN: It is likely, isn't it?

THE WITNESS: I couldn't say. I can only use the letter. Knowing very little about the actual inventory in the area, I would not be in a position to say.

THE CHAIRMAN: I know very little about timber, but it seems to me from the figures you have quoted here that if they are accurate there is a tremendous concentration of timber in Wood Buffalo Park as compared with everything else in Northern Canada, wouldn't it seem so to you? From one small area there is going to be taken, according to these figures, many times the lumber that will be taken from







an area many times as large outside of Wood Buffalo Park?

A. Well, I don't know if that is really so unusual. If you look at our Exhibit 2 and you look at the area which is covered by the park, and the inventory there, and then look at the other areas -- that is, the inventory blocks below that ---

THE CHAIRMAN: Is that Exhibit 2?

A. Yes, Exhibit 2.

THE CHAIRMAN: Yes, that is a big area, isn't it?

A. It is quite a large area, this Wood Buffalo Park, and I would even say on a proportionate basis it has less inventory than the blocks south and east of it; that is, if you look at the remaining blocks which we have considered outside the park.

COMMISSIONER GAINER: But doesn't it still sound somewhat strange that the proportion of allowable to total inventory would be four or five times higher than for other areas?

A. I may be hazarding a guess, but it would seem to me that the reason is because of this over-mature timber. The Von Mantel formula really talks about a normal forest with the normal distribution of trees by age, it would seem that a forest which has a lot of mature timber, and not a normal forest in terms that the distribution is skewed in terms of the older timber, you would allow for a





greater allowable as compared with an area where there is a normal distribution of trees, and this may be the reason.

COMMISSIONER GAINER: Although, you have used the Von Mantel formula yourself?

A. Yes, we used it on the advice of the Department of Forests of Alberta.

COMMISSIONER GAINER: And you would get a relationship of just under 2 per cent to the annual allowable and inventory?

A. It is about 10 per cent.

COMMISSIONER GAINER: Do you think there could be that much?

A. I really can't say. I would like to say it probably depends on the distribution of trees available in a given area.

THE CHAIRMAN: The information that Mr. Roethel has got is that the proportion of older mature timber is greater along the east route than on the west route, so the figure should be reversed.

A. Well, we used the inventories given by the Forestry people of the province, and we have used their recommendation and the formula they suggest, and we had no other way of determining an allowable cut other than that.

THE CHAIRMAN: Everything would be explained if that 50 million were board feet instead of cubic feet, wouldn't it?





A. Yes.

THE CHAIRMAN: It is a very easy error to make?

A. We can check on that.

THE CHAIRMAN: Do you think it could be done this afternoon?

MR. BOYD: Perhaps the Commission could inquire direct from the Department. There is no special relationship between us and the Department, and perhaps the Commission would get a faster reply.

MR. BALDWIN: It is on page 9 of the brief, and it says 50 million board feet.

THE CHAIRMAN: Mr. Roethel, if that 250 million were changed to 50 million, would there then be any material discrepancy between your opinion and the opinion of the railway company?

MR. ROETHEL: No, we would fully agree -- 10 million up or down.

COMMISSIONER GAINER: But you would still not be satisfied with the higher ratio that seems to have been applied on the east and the west -- in the order of three to two?

MR. ROETHEL: That is up to the Commission to judge what is wrong there, but I just put it in as an observation. It was rather suspicious that they always had more on the eastern route.

COMMISSIONER GAINER: That observation would still stand, as far as you are concerned?







MR. ROETHEL: Still stand, yes.

MR. BISHOP: Mr. Chairman, could I point out, on a minor point, that the discrepancy which would still exist even allowing the change of 50 million cubic feet to 50 million board feet, may be explained by the fact that the Thorp Report on which Mr. Roethel relies, apparently concerns the timber berths in the Peace River Valley in Wood Buffalo Park. It does not cover all the timber berths in Wood Buffalo Park.

MR. ROETHEL: No, I used Mr. Thorp's thesis as basic material, but I didn't use his inventory figures entirely. As a matter of fact, I increased his inventory figures by 2. So, this will not be the fact. However, if you still look for a discrepancy, I would say that if we got 40 million, and the Department of Northern Affairs got 50 million, that is nothing alarming since the Department of Northern Affairs say they used a percentage formula of 2 per cent which must be regarded as very approximate. So, if they didn't do it as we did it, there should be a difference of 10 million, and I wouldn't worry about that.

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THE CHAIRMAN: Certainly the Department of Northern Affairs filed a brief in which they told us the annual allowable was 50 million. They had it read here to us and they said it was 50 million, and we were discussing board feet during that time.

MR. BOYD: Yes, the brief has just been shown to me. I have not seen it before.

THE CHAIRMAN: It is an extraordinary discrepancy if they intended to say 50 million cubic feet.

MR. ROTSTEIN: The error could work the other way, too, perhaps.

THE CHAIRMAN: Well, it was in a written submission and in an oral statement, both of which were wrong.

MR. ROETHEL: Yes, I think it is the conversion factor. It can happen, but it is too bad.

THE CHAIRMAN: Is there anything else?

MR. BOYD: In regard to that matter we could formally admit that they had made an error. They are gone now.

THE CHAIRMAN: Yes. Is there anything else.

MR. LEVESQUE: No, sir.

THE CHAIRMAN: I would like to ask Mr. Rotstein a few questions. What do you say about the pulp situation, Mr. Rotstein. Mr. McNab gave us an estimate based on his own observations to a considerable





extent that he thought there was enough timber along the western route to support two pulp mills, and he doubted whether the timber of the east route is located in such a way as to make even one pulp mill economic.

A. I think there has been a long history of promoting pulp mills in the western area, and I think the only pulp mill - - at least the only one I can think of - - that exists anywhere in that region is at Hinton. This is probably due to the peculiar costs or marketing situations which are attributable to the construction of a pulp mill in that area. I really do not know enough about the pulp mills and the economics of pulp mills, as regards where they should be situated, or where they should be oriented with reference to markets, and the cost factors of moving materials around, to be able to say anything useful, but I would like to read a section to you, sir, if I may, from the MacGregor Report which discusses the situation in regard to the pulpwood industry in this area.

MR. BALDWIN: What page is that?

MR. ROTSTEIN: I believe it is on page 20 of the MacGregor Report - - no, it is on page 77; I am sorry. It is the second paragraph. Should I read it, sir?

THE CHAIRMAN: Yes.

A. "The ultimate future of the pulpwood industry in Northern Alberta is not very clear. There are areas which would support pulp mills, but due to







competition in this industry from the rest of Canada, the United States and other foreign countries including New Zealand, it does not seem probable that all the pulpwood resources of Northern Alberta will be used during the next thirty years. In the Commission's opinion, it seems likely that pulpwood mills will be built as outlined below, but there are so many factors that complicate the situation that this opinion could turn out to contain a large margin of error. Pulp mills could be located prior to 1975 as follows: Lesser Slave Lake, area 1....." - - and the map they refer to is on page 21 - - "Grande Prairie, area 1. Peace River Area 1.

It appears that an additional pulp mill could be located in the McMurray area by 1977, and that it would draw its timber from Lac la Biche area 3 and some parts of areas 1 and 4."

May I add, sir, that it is mentioned here that the probabilities of a pulp mill being built are slim, and in the Commission's indication of where the pulp mills could conceivably be located, these are areas which border on a railway at the present time; that is, Lesser Slave Lake, Grande Prairie, Peace River and the McMurray area are all served by a railway at the present time, and one would not require additional rail service to take care of pulp production as mentioned here.

MR. BALDWIN: I think the last paragraph





reads, sir:

"A pulp mill to use the timber in area P1 might be built along the Notikewin River downstream from Manning, or on the Peace River near the mouth of the Notikewin."

That is the final paragraph which Mr. MacGregor used in that particular context.

MR. FOUKS: That agrees with Mr. McNab, if I remember correctly.

THE CHAIRMAN: That is another pulp mill.

MR. BALDWIN: No, that is the one referred to as Peace River area 1. I just mention that because Mr. Rotstein suggested that these were all envisaged as being on a railroad, and Mr. MacGregor has one in the Peace River on the Notikewin, which is 65 miles away - -

THE CHAIRMAN: Yes. What does Mr. MacGregor say about the Hinton Pulp Mill?

A. I do not recall that there was any mention about that.

THE CHAIRMAN: He did not envisage a mill at Hinton in his report?

A. I do not recall any mention, but I can look through to see if there is anything.

THE CHAIRMAN: Do you know, Mr. Baldwin, if Mr. MacGregor said anything about a pulp mill at Hinton?

MR. BALDWIN: No, he could not have because the terms of the reference restricted him to the area





north of the 55th parallel which would exclude Hinton, in any event.

THE CHAIRMAN: You have dealt with pulp on page 18 of your brief, and you say:

"It is therefore logical to expect that, if and when pulp mills are considered to be economic in these northern areas, a railway on either route would offer approximately equal opportunities for development". Are you drawing on the MacGregor Report for your conclusions there?

A. Yes.

Q. You have no further information about the pulp possibilities, Mr. Rotstein?

A. No, sir, not other than that.

THE CHAIRMAN: You have said on page 19 that you thought the gross annual sustainable yield of this timber is around 60 per cent greater on the Waterways route than on the Grimshaw route. If it should turn out that the Department of Northern Affairs meant to say 50 million board feet instead of 50 million cubic feet your conclusions would be quite different, would they not?

A. Yes, I think we would have to change our conclusions, sir.

MR. LEVESQUE: Meaning, presumably, the conclusion on the 60 per cent, and not the general conclusions in the brief.

THE CHAIRMAN: Well, the general con-







clusions with regard to timber.

MR. LEVESQUE: Yes, the general conclusions with regard to timber.

THE CHAIRMAN: Oh, yes, I did not mean the conclusions as to which railroad. I would like to go back to the sentence on page 15, which I think Mr. Baldwin has referred to, where he says he considered it significant that relatively few operations are presently under way along the Grimshaw route. The evidence we have had would indicate there is much more extensive lumbering going on in the Grimshaw area than on the other side of the province, Mr. Rotstein. What do you say to that? Our evidence would indicate about six times as much lumber is being taken out along the Grimshaw route than has been taken out along the Waterways route; it is between five and six times more?

A. Well, in writing the brief and making up the brief we had a particular frame of reference, and our main consideration was not only the existence of resources but also the relevance that resources would have for a railroad, and it appeared to us that there were extensive lumbering operations in the areas bordering a railroad at the present time, and that some of the operations which took place north of Grimshaw could truck lumber to local markets and did not use the railway, or they could truck to Grimshaw for the long haul of lumber, say, to eastern markets





and to markets in the United States. We made some estimates on the lumber that could be cut in the area north of Grimshaw, and we did not consider it relevant because we felt the revenues that would derive from the cutting of this lumber would be quite small, and we also concluded that it could conceivably be trucked into Grimshaw for furtherance by rail.

THE CHAIRMAN: Have you got your brief in front of you?

A. Yes. What page is that?

THE CHAIRMAN: It is page 15; you say:

"However, it is considered significant that relatively few operations are presently under way..."

What do you mean by that? Perhaps you meant to say, from what you have just said, that you considered relatively few operations are now considered by the railway to be relevant to a railway; is that what you meant to say?





A. I believe that would be more in the sense of - of course, few operations - -

THE CHAIRMAN: Would you like an adjournment for a few minutes?

A. I would like to answer that later. I would appreciate that.

--- A short recess

THE CHAIRMAN: Mr. Rotstein, can we go ahead now?

A. With regard to the statement here that few operations are presently under way, my information is that there are three operators which cut some 13,000 tons of lumber in 1958 which are currently operating within a distance of some 85 miles of Grimshaw, out of Grimshaw, and in relating this to the brief, we felt this would not be significant in terms of a railway, because the lumber can be trucked into railhead at the present time, and in terms of revenue the additional 13,000 tons would be very, very minor.

THE CHAIRMAN: The addition of 13,000 or 13,000,000?

A. There are 13,000,000 tons being cut at the present time north of Grimshaw within a distance of some 85 miles, and this involves some three operators.

THE CHAIRMAN: Can you give us the names







of those three operators?

A. I believe the three of them are Swanson, H. N. Smith and North West Lumber sales.

THE CHAIRMAN: That was 1958?

A. Yes; it is the year from July, 1958, to July, 1959.

THE CHAIRMAN: Now, when you say 85 miles north of Grimshaw, does that refer to all the lumbering operations which are taking place in between Grimshaw and Hay River?

A. I believe these three would be the three that could possibly be affected by a railway which would go along the Grimshaw route.

THE CHAIRMAN: Let me further ask you this: are the conclusions with regard to lumber on the proposed Grimshaw route based upon this information that you have, that from July, 1958 to July, 1959, there were only 13,000 tons of lumber which were cut?

A. Yes. We are considering that area which would be adjacent to the railway.

THE CHAIRMAN: And would be affected by the railway?

A. Yes, and would be affected by a railway.

THE CHAIRMAN: 13,000 tons is the information you have from these three companies, and those are the only companies?

A. Yes.





THE CHAIRMAN: I think our evidence was that it was over twice that, wasn't it?

MR. FOUKS: In the brief, the statements submitted by the same company, Northwest Lumber, indicates that their present production was approximately 25,000,000 feet annually, all of which is hauled from 100 miles to the railhead and some 83 miles.

THE CHAIRMAN: When you say 13,000 tons, could you calculate that for us into board feet?

MR. FEEHAN: 9 million.

A. Possibly one ton is equal to a thousand board feet.

MR. FOUKS: One and a half, Mr. Chairman, I understand.

MR. FEEHAN: That would work out to approximately 9 million board feet, sir.

MR. ROTSTEIN: The conversion factor we have here is based on a sample of lumber made by the Northwest Alberta Railways, and they have indicated 2,000 pounds equals 1,000 f.b.m.

THE CHAIRMAN: Would you tell me what the source of your information is?

A. This tonnage is based on statistics given to us. They were compiled by the Forestry Department of the Government of Alberta by management districts, and we have included the timber within these management districts which would be adjacent and





which would be affected by a railway.

THE CHAIRMAN: It would be on management districts.

A. Yes.

THE CHAIRMAN: Q. Now, on page 16 you have said that the Denny Logging Company has a berth containing 125 million board feet of spruce and is also producing sawn lumber. Have you any information on how much lumber the Denny Company is now producing?

A. We have some information here showing that in the period 1958 to 1959 Denny Logging Company produced 1,850,000 board feet.

THE CHAIRMAN: Which would be 850 tons?

A. Yes.

THE CHAIRMAN: Do you know what they did with it?

A. We don't know where it was shipped to.

THE CHAIRMAN: Anybody else any questions in connection with the timber?

COMMISSIONER GAINER: I have one, if you don't mind, Mr. Rotstein. I take it that, as it is suggested this morning on sectional traffic, page 20, I think, your estimates are designed to bring out the amount of tonnage that would accrue immediately to the railroad, and you mentioned that to this you had only added certain developmental tonnages, such as zinc and lead and concentrates might







supply, and the other would be the lumber from Wood Buffalo Park. Would that be the some 20,000 tons you mentioned?

A. Yes.

COMMISSIONER GAINER: The question arises, why would you include that on a developmental basis on the one route without allowing anything for development on the other, unless there are any reasons for discounting any development, that is lumber, on the west route?

A. The traffic we have included is the traffic which we feel would come into being almost immediately after the railroad would be built. At the present time there are two lumber companies up in Wood Buffalo Park which have plant facilities that can handle 50 million board feet a year, and it appears that their main problem is getting the lumber out. This is due to the seasonal type of transportation that is available to them at the present time. So they are not in a position to make the fullest use of their plant and they have no alternative way of getting the lumber out. For instance, there are no all-year-round roads. This makes for a curtailment in their production. However, since the investment in this plant has already been sunk, it seems to me that the construction of a railway and an all-year-round - and the fact that an all-year-round carrier would be available, surely this pro-





duction would be forthcoming and the shipments would actually take place.

COMMISSIONER GAINER: In other words, your point is that the capacity already there and you are counting on merely an expansion of the production immediately?

A. Yes. There is no guarantee of this movement.

COMMISSIONER GAINER: Would you be able to comment on why operations of this sort would go in and over-capitalize their whole operation in the absence of transport and in the absence of year-round-facilities?

A. There may be a number of reasons. There may have been misjudgment about markets, there may have been misjudgment about the type of markets that would be available, and the fact that they are in a peculiar position in regard to stocking inventories; they can't stop inventories all the year round and they can only under-utilize the plant they have. Given all-year-round transportation, they would be shipping in excess; we have been conservative in arriving at this 20,000 tons.

THE CHAIRMAN: Arriving at 20,000 tons?

A. I think that is what we gave this morning, sir.

COMMISSIONER GAINER: 20,700.

A. 20,700, yes.

THE CHAIRMAN: That they would bring out?





A. Yes.

THE CHAIRMAN: 20,000 tons, which would be 20,700,000 board feet?

A. Yes, sir, and they have a capacity of some 50 million board feet.

THE CHAIRMAN: You think they would bring us immediately 20,000?

A. Yes. We have sort of hedged on the conservative side.

COMMISSIONER GAINER: You would put that in a different category from new business or any new business?

A. Yes. Assuming that no new market was there at the present time, then we haven't included a figure which would be in the same category as other resources which really need manpower and plant to develop it.

THE CHAIRMAN: Do you consider this freight valuable from the point of view of the railway, Mr. Rotstein?

A. In the movement of lumber there are really two types of movement: there is the movement to the domestic market, which would be considered a relatively high value type of shipment from a railway point of view; and there is the long haul movement to more distant markets, and this would be a sort of low value haul from the point of view of a railway. As regards the lumber along Waterways, the value of this resource to the railway would be really contingent







upon markets to be served, and that would be determined how valuable it is on the basis of length of haul.

THE CHAIRMAN: You put in a figure as to the revenue which you expect in regard to each of the two routes. How much would you attribute to this lumber from Waterways. 3.6 million dollars is the revenue you expect?

A. In totals?

THE CHAIRMAN: Yes?

A. Yes.

THE CHAIRMAN: How much of that would you attribute to this anticipated lumber freight?





COMMISSIONER GAINER: Perhaps those figures will come out later?

A. Yes, we admitted that we would present some type of indication, and we were not free to disclose the actual revenues.

MR. BOYD: The fulfilment of the undertaking to try and get figures to show the comparative revenues of the two lines, and which would be the kind of an answer we would like to give.

THE CHAIRMAN: Could you tell us now what proportion, or anywhere near?

MR. BOYD: Well, it would only leave one segment remaining, and it is easy to subtract the tons, and you have got the rest.

THE CHAIRMAN: Can you tell me whether it is a substantial part of the \$3.06 million?

MR. BOYD: I don't know whether Mr. Rotstein can.

A. It represents a very, very minor portion of the total revenues generated.

COMMISSIONER GAINER: Could you say whether you have assumed an export rate on it -- a through rate?

A. I believe the rate included there was the long haul rate to eastern markets. It is this preferential rate there which would be the low rate.

THE CHAIRMAN: You anticipate 20,700,000 board feet as the amount of lumber that would come





out along the Waterways route, but you didn't anticipate anything at all, did you, with regard to lumber along the Grimshaw route?

A. Yes, the reason for that is that the Grimshaw route really doesn't require a railway to exploit the resources. It may be more, perhaps, a question of markets, but the fact is they have a highway in existence which gives all year round access to the railhead at Grimshaw, and other things being equal they would be in a position to ship lumber at the present time.

THE CHAIRMAN: In any event, you didn't anticipate any lumber at all coming along the Grimshaw route?

A. No, we have not included any here.

THE CHAIRMAN: The evidence that we had is that you might reasonably expect three times as much lumber coming along the Grimshaw route as you have anticipated for the Waterways route, and there is equipment along the Grimshaw route already, Mr. Rotstein, that could produce 60 million feet at once, just as there is up in the Wood Buffalo Park that would produce 50 million feet. Is that the evidence?

COMMISSIONER GAINER: I am not sure those are the figures, but there has been the question of doubling the capacity.

THE CHAIRMAN: There is capacity that can produce double, and what is being produced now is between 29 and 30 million board feet.







MR. BISHOP: That is what Mr. Collins said, and that is with regard to the new companies whose names I gave to the Commission today.

THE CHAIRMAN: Didn't we get that from Mr. Bickle or Mr. Smith?

MR. FOUKS: That is right.

THE WITNESS: This figure applies to a great number of management districts that really lie outside the area that would truthfully be considered as being adjacent to the railway.

THE CHAIRMAN: You have relied on the information you got from the Alberta Government, have you?

A. Yes.

THE CHAIRMAN: Did you get it in one letter?

A. We don't have it all in one letter. The information here has just been out about a week, and these are the preliminary estimates, and they haven't published it as yet, and we just have whatever they had available at that time.

THE CHAIRMAN: Was it given to you orally, or did you get it in a letter?

A. We have a photo copy of the information. It is a photo copy of office records of the Department of Forests, and it is not as yet ---

THE CHAIRMAN: From the Alberta Government?

A. Yes.

THE CHAIRMAN: Could you let us have it as an exhibit?





A. Yes, we could file that.

THE CHAIRMAN: So we could check it with the government officials?

A. Yes, we could file that. Could we file this at a later date, perhaps, when we have made a copy?

THE CHAIRMAN: Yes, that is all right.

MR. FEEHAN: I have a few questions, sir.

BY MR. FEEHAN:

Q. Mr. Rotstein, as the Chairman has pointed out to you, there is presently being produced north of Grimshaw, or in the Grimshaw area, approximately 30 million board feet per annum, and the Commission has, prior to this date, received information that would double in the event a railway went north of Grimshaw. According to my calculations, and correct me if I am wrong -- and I might add this, that we also have received information that almost the entire production is going to the Toronto market and south to Chicago from that area. Now, it is my understanding that if that is the case there would be approximately 1100 cars per year going from Grimshaw to the Toronto and Chicago markets. The evidence also has been given that a foreign market, or the Toronto market, could be found for twice that much, so there would be 2200 cars per annum shipped to the Toronto market from a west route. I also have some freight rates here which would indicate that a car costs \$1,000 to ship to Toronto -- one car. Eleven hundred cars





would gross the railway \$1,100,000 per annum, and if you double that you would get \$2,200,000 per annum. That would increase the railway gross revenue on the new line by \$1,100,000, wouldn't it?

A. Are you speaking about the incremental revenue on the new line?

Q. I am speaking of the gross revenue that you refer to on page 20 of your brief.

A. Where is that, sir?

Q. \$3 million is the figure.

A. And this represents what?

Q. This would be an increase in lumber alone of \$1,100,000.

A. This is the incremental revenue to the new line?

Q. Yes. I am speaking only of the additional production which would be provided if the new line were to be built north of Grimshaw.

MR. BOYD: I think there is a difference of understanding here. The revenue you are asking is what would accrue from the shipment to Toronto and Chicago. You are talking about the revenue on the new line only.

MR. FEEHAN: Yes, that is it.

MR. BOYD: Are you saying \$1,000 a car through Grimshaw -- you have a very long question there.

MR. FEEHAN: Yes, I had to supplement it.







The point I am trying to make is this, that there would be an increase on that west line, a completely new increase of 30 million board feet per annum, and that 30 million board feet per annum would provide the railway with an additional gross revenue of \$1,100,000.

Q. Would you question that statement?

THE CHAIRMAN: But it would not be attributed to just the new line?

MR. FEEHAN: Yes, sir.

THE CHAIRMAN: The new line -- it would be attributed to the haul over the new line plus several thousand miles of old line.

MR. FEEHAN: That is true, sir, but it would increase the gross revenue -- well, I assume all these figures are taken on the same assumption -- this \$3 million; I don't know.

THE CHAIRMAN: Perhaps we had better find out.

COMMISSIONER GAINER: I think not, Mr. Feehan.

MR. BOYD: The question also assumes there is a market for whatever you can produce and ship down there.

MR. FEEHAN: We have evidence that is the case, that there is a market for whatever can be shipped.

THE CHAIRMAN: Yes, that is the evidence that we have had. Perhaps it is not right.





MR. BOYD: Well, that is an assumption. I just want to make sure this assumes there is a market.

COMMISSIONER GAINER: It may be that the question is still relevant even though we recognize we are talking about revenue accruing to the total rail operation and not just the new line.

MR. FEEHAN: Yes.

Q. I would like to find out if this figure of \$3 million is just the amount of money which would be made on the new line itself, or would it be the new line combined with existing lines?

A. The \$3 million, sir -- that is the revenue which would accrue to the new line only, and includes a sum total of revenues from each type of commodity which would be shipped on the line.

THE CHAIRMAN: Just along the new line?

A. Yes, sir.

THE CHAIRMAN: And that much money would be attributed to just the new line?

A. On the basis of the tonnage which we gave you this morning.

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MR. FEEHAN: Q. In arriving at those figures -- now, let us take the old worn out pair of boots. Did you in arriving at these figures take the cost of shipping that set of boots to Grimshaw, and then stop there, and then take the additional freight charges north of there to your point of destination? Did you break them down in that way?

A. Well, breakdowns are quite complex. The revenues -- I really know very little about how revenues are prorated between the number of carriers, but this would be the portion of the revenue which would go to the new line for hauling those commodities for which we have set up estimates of what would be hauled.

Q. Let me ask you this question ---

A. Excuse me. This would go as a normal commodity through rate. It would move at a through rate that has been -- I guess these rates are in existence, and the lumber would go at this long-haul rate. That is my answer to the question.

COMMISSIONER GAINER: Let me see if we can clear this up. You are suggesting we might take a grain movement of 50,000 tons on the new line, and you would estimate a through rate on grain, but the \$16,000 of revenue accruing to the new line would be the difference between the through rate from Grimshaw to some export point and, let us say, from Keg River to some export point, and you would then multiply that by the number of bushels and tons, and







that would be the revenue accruing to the new railway?

A. Yes, it would be the revenue for the through haul.

COMMISSIONER GAINER: Using through rates for some commodities, namely, grain and lumber, but not necessarily for all?

A. Yes.

COMMISSIONER GAINER: And you make some difference in regard to where your commodities are going?

A. Yes, this is done by agreement by the various carriers.

COMMISSIONER GAINER: Does this help you along your way now, Mr. Feehan?

THE WITNESS: Could I interject one other thing. My information here shows that only some 275 cars of lumber were handled ex Grimshaw by the N.A.R. in the year 1958, and I question ---

THE CHAIRMAN: How many cars?

A. Two hundred and seventy-five cars ex Grimshaw, and I wonder where the additional cars would come from.

MR. BALDWIN: How many from Peace River?

A. I am sorry; I do not have that.

MR. BALDWIN: The reason I mention that is because some of the lumber coming from the north is loaded at Peace River and there may be a cut-off there. I do not know anything about it, but a substantial amount of lumber coming from the north is





loaded at Peace River. If you take the cut-off coming down the Mackenzie Highway you may find it is about eight miles longer going to Peace River than going to Grimshaw.

THE CHAIRMAN: Is there any of it trucked over to Fort St. John?

MR. BALDWIN: Oh, no, I do not think so. From the British Columbia border to Hines Creek it is processed at Hines Creek, and to the north. Lumber coming down from the north may be coming down to Grimshaw to be processed at the North West mill there. It may be loaded at Grimshaw. I have seen cars loaded right at Peace River, and that would be from the trucks coming down the Mackenzie Highway, but what the proportions are I do not know.

THE CHAIRMAN: However, with respect to the 50 million feet that is being cut now, does most of it come south, or does most of it go north?

MR. BALDWIN: I would think most of it goes south. Mr. Collins would be better able to answer that than I, but I think most of it comes south.

THE CHAIRMAN: Can you find out for us?

MR. BALDWIN: Yes, we can get in touch with Mr. Collins and get his figures on that.

THE WITNESS: For your information, the number of cars handled out of Peace River was 59 for the same year.

COMMISSIONER GAINER: Would that ex Grimshaw





figure include Hines Creek loadings?

A. No, that is loaded right at Grimshaw, the idea being that it is the closest point to the highway, and the highway is your point of access, as it were, and it would seem that the trucks are loaded at Grimshaw.

COMMISSIONER GAINER: Yes. I understood there were operations generally north of Hines Creek, but I am not sure that they truck it in there necessarily. I am not familiar enough with it.

THE CHAIRMAN: How many tons are there to a car, Mr. Rotstein?

A. It would be 28 tons to a car. The number of cars loaded at Hines Creek in 1958 was 561.

THE CHAIRMAN: At Hines Creek?

A. Yes.

MR. FOUKS: How many cars of livestock at Hines Creek, Mr. Rotstein?

MR. FEEHAN: I think that would make up the 1100 cars altogether. It is fairly close. It is the 1100 cars I was speaking about.

MR. BOYD: Were you speaking about livestock too?

MR. FEEHAN: No, I was speaking about 1100 cars approximately per annum making their way to the Toronto market.

THE CHAIRMAN: There are 28 tons to a car-load?







A. Yes.

THE CHAIRMAN: That would be close to the estimate we have been given, namely, 275 at Grimshaw, 59 at Peace River, 561 at Hines Creek. That makes a total of 895. It is close to 900, and if it is 900 it would be 25,200 tons, so that if you ---

A. Well, I can give you the other points. For Fairview we have 43 cars-- we have a total here of 938 cars.

THE CHAIRMAN: From where?

A. From these points which we mentioned; Peace River, Grimshaw, Fairview and Hines Creek.

THE CHAIRMAN: That figure corresponds with what has been given -- something in the neighbourhood of 30 million board feet?

A. Yes. I did not quite understand the relevance of the question, sir -- as to why this figure was brought up. In other words, what was the relevance of the mentioning of the 1,000 cars?

THE CHAIRMAN: I thought you were suggesting that only 270 cars of lumber had been handled out of Grimshaw, which suggested there was only a very small amount of lumber coming out of there -- less than the amount of lumber the operators have told us they have been shipping.

A. Yes, but you would have to consider only, I think, Grimshaw as being relevant in terms of constructing a new railway. All this area already





has rail service in existence -- everything from Hines Creek to Peace River. There is a rail line, and it can handle the production that is going on in that area at the present time, but it would not be relevant --

THE CHAIRMAN: Some of that lumber that is loaded at those points is cut from the neighbourhood right around the present railroad?

A. Yes.

COMMISSIONER GAINER: Its relevance may be questionable, but we have received evidence to suggest that some portion -- perhaps some substantial portion -- of the increase that is anticipated in the area might well come from more distant regions north of what are now being tapped by truck. We have no way of saying how much that is exactly, but I think that was partly the significance of the question earlier.

A. It should be remembered that most of this lumber is moving to Toronto or to eastern markets and the United States, and that from a revenue point of view the incremental revenue would be very, very minor, if anything, because of this rate system which works on a block basis, and, therefore, you may have a line extending north of Grimshaw which is loading cars but which is without any additional revenue to the railway.

COMMISSIONER GAINER: Yes, I can understand that, and that would be the same on the other route as well north of Waterways?





A. 'Yes'.

MR. FEEHAN: Mr. Fouks has told me he would be very interested in obtaining similar figures as to live-stock, if you have them, as to how many cars come out of the various areas?

MR. FOUKS: The Hines Creek area and the other area, because that livestock would be trucked ---

THE WITNESS: With regard to the trucking there is definite information that the truckers are removing live-stock in quite substantial quantities from the Peace River country down to Edmonton, and they could conceivably use the railway, and livestock is essentially oriented to the market. In other words, it has to exist close to its market, and if they can do it at the present time our reasoning is that there is no reason to believe that the construction of a new segment to the railway would guarantee them that livestock would go by rail. In other words, the trucks would still carry the livestock to the markets, and this is indicative of the fact that trucks have definite advantages with respect to a certain type of haul. They offer a much better service than the railway does. I think they offer a much speedier service, and their costs are so that they can handle this commodity, and this is a commodity a lot of which will go by truck after the construction of a railway, and the fact is that this thing goes on at the present time.







THE CHAIRMAN: Are you assuming that no livestock comes from Grimshaw now by railway?

A. No, there is some livestock. I just make this point to show that it can go by truck because in fact it does go by truck.

THE CHAIRMAN: If the truck has such a great advantage why does any of it go by rail from Peace River?

A. The advantage that trucks have is related to the return movement that they would ordinarily have. In other words, a truck moves up north from Edmonton into the Peace River country carrying manufactured and miscellaneous goods -- that is, goods that are high-rated goods and the cost of transportation of which is small in relation to their total value -- and the relevant consideration, therefore, is not to come back empty but to bring something back, and rather than have a return empty movement they will haul whatever they can haul, or whatever is destined for the return movement. In that event their rate will be very competitive with the railway's rate. I would imagine that the railway would get that traffic for which there are no trucks available on a given day, say, and there is a need to ship to a particular market. There may be some extenuating circumstances or some peculiar circumstances, which would make any shipment desirable by the railway.







THE CHAIRMAN: Well, can you give us the figures of how much came in from Grimshaw and Hines Creek?

MR. FOUKS: I might say, my lord, while they are looking up the figures, that they kill in the City of Vancouver 8,000 to 10,000 hogs a week that come in by rail from Alberta -- none by truck. That information was given to me by Mr. Chambers, the manager of Canada Packers in Edmonton, and by Mr. Matheson who is the pork manager. Eight thousand to ten thousand hogs per week are slaughtered in the City of Vancouver, and there are approximately 80 hogs per car, my lord.

THE WITNESS: We have data here for Grimshaw, and in the year 1957 there were 58 cars of cattle moved out of Grimshaw, and the tonnage associated with that was 566. The similar figure for the year 1958 was 76 cars, 752 tons; for 1959 to date -- that is, from January to July -- there were 12 cars with 120 tons.

THE CHAIRMAN: Twelve cars?

A. Yes.

THE CHAIRMAN: That is, from Grimshaw?

A. Yes, sir.

COMMISSIONER GAINER: Is that just cattle, did you say?

A. Yes, this is cattle. I have some figures here for swine or hogs -- 130 cars in 1957.





MR. FOUKS: This is out of Grimshaw?

MR. ROTSTEIN: This is out of Grimshaw, yes. 206 in 1958, and for 1959, the period January to July, 112.

MR. FOUKS: Hines Creek.

MR. ROTSTEIN: I am sorry, I don't have the figures for Hines Creek.

MR. BOYD: I wonder what the relationship of those figures would be to the points before the Commission now.

THE CHAIRMAN: I would like to ask a question of Mr. Baldwin which might clear this up.

Mr. Baldwin, would there be any cattle coming from the north that the proposed Grimshaw railway might serve?

MR. BALDWIN: Possibly Peace River and possibly Berwyn. I would say that the majority would be loaded at Grimshaw, but there might be some at Peace River and Berwyn. There are about 7 or 8 cattle buyers come to this point and there is a bit of competition with regard to prices and values and so on. As I say, some might come to Peace River and some to Berwyn. I think the majority would come to Grimshaw, from the north. That would be my opinion.

MR. BOYD: I have no objection to giving information if it is wanted.

THE CHAIRMAN: Could you get those figures





for us?

MR. BOYD: I presume so.

MR. ROTSTEIN: I could develop it. I could get it from Northern.

THE CHAIRMAN: You don't want Hines Creek, do you, Mr. Fouks?

MR. FOUKS: No. The only relevancy was the statement in the brief that everything would go by truck. No, I don't need it.

THE CHAIRMAN: Do you want it for Berwyn and Peace River?

MR. FOUKS: It would be of some assistance to the Commission, Mr. Chairman.

MR. ROTSTEIN: Those two points are not relevant. I don't think so. We are talking about cattle which would move down from the north, and the only access they have is the highway, and the highway necessarily ends at Grimshaw. I don't see how other points would be relevant because they would be loaded at these points.

THE CHAIRMAN: Some of the material coming from the north, some of that livestock would come to Berwyn, according to Mr. Baldwin, and some to Peace River. Does that road, that cut-off, come from Chinook Valley to Peace River?

MR. BALDWIN: No, it comes from about 5 miles north of Grimshaw and lands at the main highway, number 2 highway, just west of the airport some







seven or eight miles from Peace River.

THE CHAIRMAN: Do you know why the livestock was taken in over those extra few miles rather than loaded at Grimshaw?

MR. BALDWIN: Yes. Up until the time I was involved in another career we had 80 head of cattle of our own, and when we contemplated disposing of them we went as far as Berwyn and discussed the matter with the buyers at Berwyn and Peace River. I would say that the farmer who depends on his livelihood for the sale of livestock would certainly do the same thing. It is only a few more miles to come to Peace River. I think it is 16 miles by road to Peace River on a paved highway. The shipping days are from Friday to Saturday, and especially coming down from a long distance from Fort Vermilion where he has to truck, the margin of profit is very small and he would be bound to get the best deal he could.

MR. BOYD: If you wish the figures we can give them to you.

THE CHAIRMAN: We are not too anxious.

MR. FOUKS: No, Mr. Chairman.

THE CHAIRMAN: Any further questions on timber?

Before we go to the next question - the next question is the traffic; that is the only thing we have left concerning the railways - I would like to finish on the timber if there is anything else to be asked about that.





Mr. Jewitt is here and I would like to ask him a question. Would you step down, Mr. Rotstein, for a few minutes? Mr. Jewitt has very kindly agreed to discuss one or two points.

This brief was presented by Dr. Leahy in which he was advocating for the railway to be built along the Grimshaw route. As I recall his evidence, he was suggesting that there was very little in the area between Lake Athabasca and Great Slave Lake that he thought was favourable for prospecting. His suggestion was this, that everything in pink that is marked on this map, exhibit 45 (a), he thought was a country or area that was unlikely to produce mines.

What do you think of that?

MR. JEWITT: Well, there are two sides to this. This area between Athabasca and Great Slave Lake he considered isn't a good place to find mines, he thought.

THE CHAIRMAN: The area in pink he thought would be unproductive.

MR. JEWITT: As I indicated, I think my friend Dr. Leahy is being a little hasty in speaking about that area as a whole. These pink areas are only imperfectly mapped, and there are small areas of the older rocks which could be productive. The area between the two lakes - you will notice that, even taking Dr. Leahy's classification, there is a considerable area here which is favourable. There are





areas still which are not shown which anyone knowing the country in detail would recognize, and in the northern section here there are small areas. This is Tsu Lake; there is a very small area here. Then there is a substantial area immediately south, northeast of the mouth of the Taltson River. Those are just examples. There are other areas of greenstone not shown north of Beaver Lodge. So as I said yesterday, it is difficult to say that no area will be productive; it is an extremely risky thing to say.

THE CHAIRMAN: You were suggesting yesterday that once you got west of Pine Point it is not a place that you would look at the present time.

MR. JEWITT: For minerals?

THE CHAIRMAN: Yes.

MR. JEWITT: No. It hasn't the same potential as the Pre-Cambrian.

THE CHAIRMAN: When you said it is difficult and dangerous to predict that nothing will be found, you are referring to the Pre-Cambrian.

MR. JEWITT: Yes. There is a potential, although the potential of the older rocks, which is, generally speaking, the green areas, are the more favourable ones.

COMMISSIONER THOMPSON: Might I put in a question here? This country has been known and prospected equally as long as north of the lake; in fact, longer. Well, as long, shall we say.







MR. JEWITT: Well, this area has been closer prospected than the inland areas.

COMMISSIONER THOMPSON: North of Lake Athabasca has just as much been prospected as north of Slave.

MR. JEWITT: Yes, pretty well - no; for this reason, because the gold - there was an immense surge of prospecting activity.

COMMISSIONER THOMPSON: Why didn't they find gold there?

MR. JEWITT: Because nobody found it.

MR. THOMPSON: Then would it be fair to say that this has proven to be a much better area than this, in fact, in spite of the fact that this is much older than that?

MR. JEWITT: Up to the present, yes. But don't forget that there have been areas prospected in Canada more than this.

MR. THOMPSON: Pine Point isn't in the Pre-Cambrian. You say there is not much chance of finding another point west. I can't see that.

MR. JEWITT: Well, you have increasing overburden of rocks. How do you prospect through that?

COMMISSIONER THOMPSON: How do you find Pine Point in the first instance? Are there no outcrops between here and here?

MR. JEWITT: Of rock?

COMMISSIONER THOMPSON: Of limestone.







MR. JEWITT: Yes, but different limestone from the Pre-Cambrian. It is a peculiar and particular form of metamorphosis. So far, to my knowledge, it has been found only there (indicating) and on the north side, and no ore bodies have been found there (indicating).





THE CHAIRMAN: What about the area here to the east?

MR. JEWITT: In this area there is lead-zinc mineralization, and the type of operation I speak of.

THE CHAIRMAN: For the purpose of the record, that is north of Great Slave Lake.

MR. JEWITT: By Windy Bay.

COMMISSIONER THOMPSON: What about up on the Flat River: how would you get that out? Supposing there was a big deposit on the Flat: would you try to go across the mountains this way, or would you go down to the river?

MR. JEWITT: I don't know the precise location of the discovery.

COMMISSIONER THOMPSON: There are several likely discoveries along there. How would they be taken out eventually? Would you expect to push a railroad down there, or try to go over the mountains?

MR. JEWITT: Well, the pass through -- the Alaska Highway goes through -- and there is a good pass through. So, if the concentrate was sufficiently valuable, it could be trucked out to Whitehorse.

COMMISSIONER THOMPSON: More reasonably than putting a railroad on down the river?

MR. JEWITT: Our railroad friends say they require a great volume of freight to justify a railroad.





THE CHAIRMAN: I think you suggested yesterday that it is not very often that a base metal mine is developed without the railroad going right to the mine?

MR. JEWITT: To be put into production, that is right.

THE CHAIRMAN: If the ore is rich enough I suppose it will stand some trucking?

MR. JEWITT: Yes.

THE CHAIRMAN: Have any base metal mines ever operated on the basis of running for, say, five months of the year and then closing down for the remainder of the year?

MR. JEWITT: The ones I was thinking of were the high silver values, and it would hardly be classified as base metal. Of course, that is trucking. The high value of the ore as a whole makes it possible to stand that transportation cost. Offhand, I can't think of any base metal mine that has operated in that way; that is, not any zinc, lead and copper. I believe the nickel mine at Hudson's Bay -- pardon me, my memory is slipping. We have done the same thing ourselves on the north coast of British Columbia, but I might mention also that that mine is now closed down and inactive because of the present price of metals. So, you have to have something exceptional to be able to do it.

COMMISSIONER GAINER: Did you stockpile or







close down?

MR. JEWITT: We stockpiled and shipped during the open season.

COMMISSIONER GAINER: In the case of asbestos, the Cassiar operation closes down?

MR. JEWITT: I think probably it is because they operate an open pit.

COMMISSIONER GAINER: Although I am not sure they could get the trucks through even if they could get it out of the pit.

MR. JEWITT: I am not sure of their operation.

THE CHAIRMAN: If substantial orebodies could be found at the east end of Great Slave Lake -- let us say the north side only -- it would mean either a railroad or stockpiling or closing down for seven months of the year, wouldn't it?

MR. JEWITT: Yes. Well, of course, closing down for seven months of the year is almost an impossible type of operation -- to recruit and bring in crews.

THE CHAIRMAN: Then, it would mean running and stockpiling?

MR. JEWITT: Yes. If you have a high enough grade you possibly could stockpile, but, generally speaking, you require continuous year-round transportation.

THE CHAIRMAN: If a fairly high grade mine.





were found at the east end of Great Slave Lake, would it be feasible to truck the concentrates over to Pine Point?

MR. JEWITT: If it were high enough grade.

THE CHAIRMAN: Would it have to be very high grade?

MR. JEWITT: Yes.

THE CHAIRMAN: It is not likely that would happen?

MR. JEWITT: No. High grade mines are very few and far between.

THE CHAIRMAN: Well, why is prospecting done seriously in the east end of Great Slave Lake for base metals?

MR. JEWITT: They have the hope -- of course, there are claims staked, and fair looking prospects near the Indian Mountain. They are, I would say, holding onto those in the hope that transportation facilities will be provided, just as we have been developing Pine Point.

THE CHAIRMAN: That would have to be a railroad, wouldn't it?

MR. JEWITT: I would say with these type of orebodies they have there, you would require a railroad, yes.

COMMISSIONER THOMPSON: Could a railroad be put from there to there?

THE CHAIRMAN: Where I am marking with an X.





MR. JEWITT: It is probable, on the edge of that green patch.

THE CHAIRMAN: I have marked two X's with a circle. How do you think a railroad might get into that?

MR. JEWITT: Well, if the railroad were built on either of the two routes, it would be feasible to extend it from Pine Point, and, because of the very expensive crossing of the Mackenzie, I would expect it to go easterly around the lake. It is a major undertaking to cross the Mackenzie River with a bridge, and I would think that would pay for a good many extra miles of railroad to get to, say, the halfway point.

COMMISSIONER THOMPSON: Wouldn't it be a very expensive business crossing the Hay too?

MR. JEWITT: Yes.

COMMISSIONER THOMPSON: Don't you think it would be cheaper to come through Lynn Lake up?

MR. JEWITT: Yes.

COMMISSIONER THOMPSON: You are covering a lot of good Pre-Cambrian country.

MR. JEWITT: Whether it would be cheaper, I don't know.

COMMISSIONER THOMPSON: You have all that good country by Stony Rapids. That is very favourable country.

MR. JEWITT: Here is another spot which is not marked green which is, I would say, a very







favourable area for prospecting.

THE CHAIRMAN: If a railroad were to be built from Lynn Lake up to Fort Resolution, and perhaps beyond that, would that go through a very favourable area?

MR. JEWITT: Well, it stays entirely within the Pre-Cambrian country, and hence would be a good development railway, yes. In that sense, of course, it would be better than the one from Waterways, and far better than a railroad from the Peace River side.

THE CHAIRMAN: Perhaps Dr. Hume has something on this.

MR. HUME: When I was in Ottawa I was quite interested, and we talked about if you were going to build a railroad through the Pre-Cambrian only, just as Mr. Jewitt said, the possibilities of building it from Lynn Lake to the mines on Lake Athabasca, and if you had enough courage you could go on and build it further north, even up as far as Coppermine which would be the extreme limit. Actually, there is very little guarantee you are going to find mines just by building a railroad. So, in these days I would think the mines are beginning to come before the building of the railroad. It is all good prospecting territory. When I was with the Geological Survey, I have been in the Lynn Lake area. I am not particularly qualified to speak on these mineral deposits, but parties were in there and I was in contact with the parties, and we had people we could call on who had been in a lot







of these areas in the Geological Survey, and we knew that was very good prospecting territory, but the one drawback, as I see it, for a Lynn Lake railroad extending into that country is that you are tending to take your material to the central part of the country.

MR. JEWITT: You have no treatment facilities for base metals.

MR. HUME: That is right; instead of on the edges where there would be a chance for world trade. It makes the haulage very much longer. As you know, in regard to Lynn Lake the material goes down through to Fort Saskatchewan, but it is a long route around.

MR. JEWITT: Could I ask something there, Mr. Chairman, about whether you have a good area or not. It strikes me there is some similarity between our discussion of this kind of thing -- whether it is good or bad -- and the situation that existed in Alberta, say, fifteen years ago when we knew the potential of the cretaceous rocks and the potential of the Devonian, and all we had was diminishing production from one small field in Turner Valley, and lots of good geologists have said, "If you spend your money there, you will most likely lose it"; but, you know what happened. It is just as futile, really, to discuss whether this is good or that is good in these undeveloped areas of the Pre-Cambrian country. Wouldn't you agree with that, Dr. Hume?

MR. HUME: Oh, yes, I think the development





of the mine must come first before the railroad. Actually, prospecting has got into a stage where thought it is difficult for an individual to prospect it is not difficult for a government party or for a party that is well supported by a mine to get into most of these areas, on account of the fact you can do it by float planes because there are so many lakes. We used to move our parties -- actually, move the canoe on the plane, and move them from lake to lake, which makes a reasonable way of getting around and prospecting. However, the individual prospector cannot do that. You have to have a lot of finances back of you to do it. Do you agree with that?

MR. JEWITT: Oh, yes.

THE CHAIRMAN: Do you suggest that the mine should be found before the railroad should be built?

MR. JEWITT: The present situation certainly calls for that, because we are very well acquainted with the difficulty we are experiencing in getting a railroad into Great Slave Lake, even though there are extensive known deposits. So, if you have no deposits it is really difficult to get a railroad. So, we have to get, certainly, some indication of what there will be in the way of orebodies, and then, if we can show enough tonnages to get these development railways built, we then, of course, hope we will get some brand new development along the course of that railroad, just as the International Nickel was able





to find the Thompson deposit alongside an existing railroad.

THE CHAIRMAN: The reason I asked that question was, you suggested that you think perhaps the discovery of mines should come first and the building of the railroads after, and that suggests to me that perhaps the prospective area over to the east of the Slave River might not be as important as we have been thinking?

MR. JEWITT: Might not be as important?

THE CHAIRMAN: Yes -- that is, if we are not going to build a railroad for the purpose of encouraging exploration, and we build a railroad after the mine has been discovered ---

MR. JEWITT: I think a railroad such as this has two functions, Mr. Chairman. One, of course, is to make it possible to serve the North generally better and help solve the transportation problems for the areas north of Great Slave, and then to make it possible for a known mine to go into production. Then, certainly, to give access, if possible, to areas where other mines can be developed. There is quite a bit of uncertainty on the agriculture and timber products.

THE CHAIRMAN: Well, suppose you leave those out of the consideration of the moment. Would you build a railroad to the mine in the most economical way, or would you build it through an area where you









hope something else may be found?

MR. JEWITT: Well, if I am concerned only with the development of that mine, I would certainly build it the cheapest way possible.

THE CHAIRMAN: I was wondering to what extent and how important a factor you think it is that you have the railroad over near the area where you hope that other mines will be found?

MR. JEWITT: As I understand from what has been said here, where cost is the stand-out, I would say you are far better off to build that railroad in some locality where you at least have a chance of developing a mine.

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THE CHAIRMAN: Does it make much difference?  
Would you allow much extra cost?

MR. JEWITT: You are putting me in the position of the Government of Canada, sir. I do not think I should have to make that decision. If I were building it myself for my own mine I would certainly put it in the cheapest location, but I think the Government of Canada has to look to the development of the country as a whole.

THE CHAIRMAN: Has anybody else any questions?

MR. BALDWIN: That is a very good observation on which to end, I think.

THE CHAIRMAN: Thank you, Mr. Jewitt.

Mr. Levesque, to come back to your problems we have, have we not, only to deal with the part of your brief concerning traffic?

MR. LEVESQUE: May I interject here, Mr. Chairman, and say that I think Mr. Rotstein would like to make one further comment in connection with the car loads of timber or lumber moving out of Grimshaw.

THE CHAIRMAN: Yes.

MR. ROTSTEIN: It is just that in regard to the car loads of lumber, sir, it should not be assumed that the car loads given include only lumber originating in portions of northern Alberta north of Grimshaw, but would also include car loads of lumber which originate, and which is cut, in the areas south of Grimshaw. I think you lumped together Hines Creek





and Grimshaw, and I would suggest that only Grimshaw would be relevant because of car loads moving out from the area north for further~~me~~ to points east.

MR. BALDWIN: Did I understand Mr. Rotstein to suggest that there is lumber originating south of Grimshaw and north of the Peace River?

Is that your suggestion, Mr. Rotstein?

MR. ROTSTEIN: Yes, I believe there is some lumber in that area south of Grimshaw.

MR. BALDWIN: This may seem like a matter of evidence, but the area south of Grimshaw to the Peace River is farming land. Now, there may be some areas in there. I do not know, but probably Mr. Rotstein can refer me to the mills and the areas where there is logging south of Grimshaw and north of the Peace River.

THE CHAIRMAN: Look at this map, will you. Mr. Rotstein, you come over here. You would not think anything loaded at Grimshaw would come from anywhere but up north, would you?

MR. ROTSTEIN: But there may be resources over here that would find their closest point to the railway would be Grimshaw.

THE CHAIRMAN: But not with the river to cross. Nothing south of the river would go to Grimshaw.

MR. BALDWIN: You can take my assurance, Mr. Rotstein, that there is nothing.





THE CHAIRMAN: Yes, that is all farm land, is it not?

MR. BALDWIN: It is all farm land in here. There might be a little lumbering here and out here, but that would go to McLennan.

COMMISSIONER THOMPSON: Yes, you would never cross that ravine.

MR. ROTSTEIN: What about here?

MR. BALDWIN: Oh, yes, there is lumbering up here.

THE CHAIRMAN: What about Fairview?

MR. BALDWIN: North of there - - but that goes into Fairview. The HR & N mill is at Fairview.

THE CHAIRMAN: There were 43 cars loaded at Fairview.

MR. BALDWIN: Yes.

THE CHAIRMAN: Would anything go into Hines Creek that would be served by a railroad north of Grimshaw?

MR. BALDWIN: That is what I was pointing out; the limits have been pushed north from Hines Creek. In some cases they are identical with some of the areas which are now being serviced by mills along the Mackenzie Highway. I made mention of the white spruce which I was told by Mr. Gauthier, the forester - - he has acquired, or is interested in acquiring, a berth some considerable distance north of Grimshaw because of the fact that their existing







limits are playing out, and they, of course, would be much better served by a north railroad than from where they are now are at Hines Creek.

MR. ROTSTEIN: The main point, Mr. Chairman, is that this area here is not really relevant. You can truck lumber down the highway and only load cars at Grimshaw.

THE CHAIRMAN: Surely you do not say we only have to consider Grimshaw in the light of what Mr. Baldwin has said? Mr. Baldwin has pointed out that lumber goes into Hines Creek from an area that would be serviced by this railroad.

MR. ROTSTEIN: Well, it would be a question of getting it out through a forest road - - an inferior forest road - - to the railway.

MR. BALDWIN: That is quite right, but there is a point of no return or a boundary line, and when they get further north of that it becomes more profitable for them, I think you will agree, to go the other way over a rough forest road to Hines Creek. That is what I was told by Mr. Gauthier, that they were reaching that point of no return.

THE CHAIRMAN: Would you not think some of this lumber loaded at Hines Creek should be regarded with respect to a proposed northern railroad?

MR. ROTSTEIN: Not that which is loaded today. This is the break even point, I believe.

MR. BALDWIN: The Clear Hills, as Mr.





Thompson pointed out - - they run through here.

THE CHAIRMAN: Yes, we see the issue and the two opposite points of view on it. That which is loaded at Peace River is lumber which should be considered. There has not been very much, I suppose?

MR. ROTSTEIN: No.

MR. BALDWIN: There was a mill at the top of the hill at Peace River which was abandoned. There is no mill nearer Peace River than the one down near McLennan, and I think that would be loaded at McLennan.





THE CHAIRMAN: Well, even taking all that, 325 - Mr. Baldwin, would you check this, please? If we take the cars that are loaded at Grimshaw and add the 59 from Peace River, that is 384 cars. That is the total of cars loaded at Grimshaw and Peace River, isn't it?

MR. BALDWIN: Yes.

THE CHAIRMAN: And 28 tons; let's call it 30 tons. That is only 11,000 odd tons, isn't it?

MR. BALDWIN: I will get in touch with Mr. Collins. There is a very substantial stockpile at Grimshaw. How much is there, I don't know. I thought I would try and get from Mr. Collins a reconciliation of this figure and what he has. So I intend to phone and get it. I will try and get that by tonight or tomorrow morning.

THE CHAIRMAN: Anything else, Mr. Rotstein?

MR. ROTSTEIN: No, sir.

THE CHAIRMAN: There is nothing else on timber, is there?

Well that brings us to the question of traffic and that is the last we have to worry you about, Mr. Rotstein. Is there a chance of you giving us a breakdown between now and three hours from now?

MR. ROTSTEIN: I have prepared something on the traffic which I hope may be of use to the Commission.

THE CHAIRMAN: You have it prepared now?

MR. ROTSTEIN: Yes, I have prepared some







indication of revenues by type of traffic.

THE CHAIRMAN: Could you put that in now?

MR. ROTSTEIN: Could I just explain what we have here? We have calculated the average revenue per ton mile which would accrue to each of the proposed railway lines. In other words, this is a revenue figure per unit of traffic. The major method for measuring traffic or measuring the product of a railway is usually in ton miles, and this would show the relative revenues for both lines for the identical product.

Since there is a mix - the mix of commodities is somewhat different on the two lines - we have arrived at different revenue figures for traffic on each of the lines.

On the Waterways route the average revenue per ton mile is equal to 2.4 cents, while the average revenue per ton mile on the Grimshaw route is 2.3 cents - 2.5 cents I would say. The other would be 2.4 cents. That would be 2.4 as opposed to 2.25. In addition I prepared here what one could call a scale of commodities by value. This would indicate which of the commodities are more valuable from a railway point of view, and we have done that by route. On the Waterways route we find that the lowest revenue commodities, in other words, commodities that would contribute least of the revenues of the railway, would be lumber, lead and zinc concentrates; the higher value traffic would be the general traffic moving on this line.





MR. BOYD: That is per unit of traffic.

MR. ROTSTEIN: Yes, per unit of traffic.  
That is revenue per unit.

THE CHAIRMAN: Yes?

A. On the Grimshaw route the lowest value traffic, that is per unit of traffic, would be grain; the next lowest would be lead and zinc concentrates, and the highest value products once again would be mine supplies and general traffic.

THE CHAIRMAN: You haven't calculated anything for lumber on the Grimshaw route?

A. No, we have not included any estimates for lumber.

COMMISSIONER GAINER: It would be one of the lowest?

A. Yes, it would be low.

COMMISSIONER GAINER: If it is low on one it is going to be low on the other?

A. Yes, because of this block system factor.

COMMISSIONER GAINER: Just following that thought, in your consideration of general freight you would, of course, have to assume a certain mix within that group. What could you tell us generally, let's say, about how much of this general freight you assume to be from distant points, how much from closer points which would carry a higher rate? I would like to know in general the reasonableness of your evidence;





how much of this you assume to be carrying the higher local rate, say, originating in Edmonton or close to it, or that originating at distant points which would yield relatively little incremental revenue?

A. Your point being the idea that - -

COMMISSIONER GAINER: Take mine supplies and this traffic into Lake Athabasca. I presume it would make a considerable difference where this traffic originates as far as railroad revenue is concerned; for instance, whether it all originates in Edmonton or Chicago, or Toronto?

A. It would be hard to answer that, because I am not familiar with the pro-ration of revenues over carriers. In other words you are asking what the distance factor has to do with revenues?

COMMISSIONER GAINER: Yes, in the calculations you have made. Would this be true or not, in theory, that it would make a considerable difference as to where your north-bound traffic originates, using north-bound as an example, mine supplies, say, in Lake Athabasca?

A. It doesn't necessarily have to depend on distance. It probably - except for certain commodity rates which are established because of particular reasons. This may be a factor of items moving along the Waterways routes operation in an area which has no alternative means of traffic, as it were.

COMMISSIONER GAINER: In other words, you







wouldn't necessarily assume a competitive rate?

A. No, and this is true to the manufacturer of miscellaneous goods.

COMMISSIONER GAINER: Whether it is subject to competition, therefore low or not, there would be a difference in the yield per mile to the railroad, would there not, depending on where the traffic originated?

A. You mean the split in revenues?

COMMISSIONER GAINER: Yes. Let me put it another way. You would not have assumed local rates starting from, say, Waterways; instead, you would take existing freight rates generally and just apply them over the additional 300 miles. You are not starting at Mile 0 at Waterways?

A. No. I believe in these estimates what we did do is we tried to estimate where the traffic would originate in the first instance to be carried to points say, north of Waterways and determine the through rate on that, and on the basis of the pro-rationing the railways have a way of determining this other mileage.

COMMISSIONER GAINER: Thank you.

THE CHAIRMAN: Have you something more in the way of analysis?

A. That is all I have, sir; unless there are specific questions.

THE CHAIRMAN: We will have some questions, but we are going to adjourn at the moment and come back tonight. Is that satisfactory?







MR. FOUKS: No, I would like, if I could, to have one question answered, because I won't be here tonight. We have made arrangements to leave tonight, Mr. Chairman, and we are leaving tonight by plane, Mr. Southworth and myself.

THE CHAIRMAN: These gentlemen want to get away tonight, too, so we will come back this evening.

MR. FOUKS: One question I would like to ask, if I may.

So that I don't misunderstand the point, it is 2.40 average per unit on the one and 2.25 on the other.

MR. ROTSTEIN: That is right.

MR. FOUKS: Based upon the analysis of the items indicated, the lowest being on the east, lumber, and the lowest on the west being grain.

MR. ROTSTEIN: Yes.

MR. FOUKS: If that product mix changed, does the rate change per unit - the revenue? In other words, the product mix is the regulating feature.

MR. ROTSTEIN: Yes.

MR. FOUKS: If, in your calculations in the west, there is considerably more lumber compared to grain, you could possibly move from 2.25 to 2.30, 2.35, 2.40, based upon mix.

MR. ROTSTEIN: I hardly think so, because lumber originating in that area would, I suppose, go to eastern markets. Being a block system, the incre-





mental revenue would be almost nil in that instance.

THE CHAIRMAN: Compared to grain?

MR. ROTSTEIN: It would be very low. I can't say how it would compare to grain.

MR. FOUKS: Could you give us the international rate on lumber as compared to grain? What would be the rates, for example, on grain and lumber internationally?

MR. BOYD: What do you mean by "internationally"?

MR. FOUKS: Haven't you got an export rate?

MR. BOYD: The rate to the U.S. isn't an export rate.

MR. FOUKS: What is the difference between the grain rate and the lumber rate, using the lowest in both cases, not the domestic?

MR. BOYD: I don't know. That is like asking what is the difference between a horse and a cow. It isn't within my knowledge, and I doubt if this witness can answer the question.

MR. FOUKS: If you change the mix - all I am trying to get at is the point of the change of mix - if you change it and you get a higher rate, then your average will go up.

COMMISSIONER GAINER: I was going to suggest, Mr. Rotstein, would you be able to fit the lumber into the scale where you have grain at one extreme and general freight on the other, even though that





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calculation wouldn't appear?

A. Its relative position as regards grain,  
you mean?

COMMISSIONER GAINER: Yes.







MR. BOYD: If specific questions like this need to be answered, I will be glad to get somebody who has more experience than Mr. Rotstein, and furnish them to the Commission. I think that would be better, because it would be an answer that could be relied on.

THE CHAIRMAN: I think we would like to have that.

MR. FOUKS: Yes, I think it would be of some assistance.

THE CHAIRMAN: How are we going to get all this additional information? Will you send it in to us by mail?

MR. BOYD: Yes.

MR. BALDWIN: While the information is being acquired, there was one other simple bit of information I would like to have. I notice from the MacGregor Report dealing with railroads on page 33 that it is suggested the total tonnage moved over from the Peace River country and to the Peace River country is set at 1,058,000 tons, of which 617,000 tons were agricultural products, and so much animal products. It seemed to indicate that a very large proportion of the tonnage was agricultural products, and probably grain. In connection with that, Mr. Rotstein said practically all the grain coming out of Peace River came out on the statutory rates, I believe. What is the allocation of the





charge of the statutory rates as between the N.A.R. and the parent companies, which may be relevant in connection with what future revenue might be available to the railway, to the N.A.R., if the line was extended through agricultural country?

MR. BOYD: I don't see any relevance in that question to the scope of this hearing. We are considering both from existing N.A.R. terminals, and the relationship between N.A.R. and its parent companies, -- I cannot see any relevance, and I would respectfully decline to answer. I would like the Commission's views on it, but it seems to me it is completely irrelevant.

COMMISSIONER GAINER: I would like to have Mr. Baldwin put the question again.

MR. BALDWIN: I will put it in dollars and cents. I assume that the rate from Peace River country would be 22 or 23 cents -- the statutory rate. I judge that it is around 20 cents from Edmonton, and the distance is a little more.

THE CHAIRMAN: This is the rate on grain?

MR. BALDWIN: On wheat: it would be about 22 cents. How much of that 22 cents is revenue to the N.A.R., and how much is revenue to the parent companies -- the division of the 22 cents a bushel?

COMMISSIONER GAINER: Do you mind explaining how you think it is relevant as far as this Commission is concerned? I can see how it might be if you are asking what accrues to the





operation as a whole, but as between the N.A.R. and the parent companies ---

MR. BALDWIN: The suggestion is contained in the brief that there could be some additional grain developed in the area north of Grimshaw, and, if so, what is going to be the revenue to the N.A.R. as a result of that? Surely that has some relevance. We might have to apportion that between the new line into Grimshaw and the existing line from Grimshaw into Edmonton. I think in one of the other briefs -- I think the Edmonton Chamber of Commerce -- it was suggested that the gross revenue to the N.A.R. from grain north of Grimshaw would result in a loss double the amount of the gross revenue, and I thought the people to find out as to the correctness of their own statement and the statement in the other brief would be ---

THE WITNESS: Perhaps an indication may be arrived at. On page 20 of our brief we say that the incremental revenue on 50,000 tons of grain would be some \$16,000. If you think in terms of doubling it to, say, 100,000 tons, and we assume a similar type of movement, you would have an additional \$16,000 over and above this. This at least suggests what additional revenues could be expected from additional grain movement.

THE CHAIRMAN: In view of that figure, Mr. Baldwin, would you look at that again and see if that







gives you what you want, and we will discuss it again when we come back this evening.

MR. FEEHAN: If that question were to be answered, I don't know why many, many others along the same line could not be answered. We might ask the railways for a split on various other commodities, and I am sure the railways should not be placed under that obligation. For instance, the split on lumber and manufactured goods originating in the east. It could be never-ending.

THE CHAIRMAN: I would like to come back again to this, Mr. Boyd: with regard to the Waterways route we know you anticipate \$3,600,000 income from the additional freight.

MR. BOYD: What that represents was defined by Mr. Rotstein.

THE CHAIRMAN: 215,000 tons of lead and zinc, and 25,000 tons of mining supplies; 27,700 tons of lumber, and general traffic of 181,700-odd tons. Is there any reason why you can't apportion those figures to those different items and show us how much of the \$3,600,000 applies to lead and zinc concentrates, and how much to mining supplies?

MR. BOYD: Put a dollar figure opposite each group of commodities?

THE CHAIRMAN: Yes.

MR. BOYD: I think there is a very good reason: it would result in a very simple calculation,







wouldn't it?

THE WITNESS: It is very easy to determine what the rates on the movement ---

MR. BOYD: It would result in the disclosure of information which we don't want to disclose, and I hope it is information which is not essential to your purpose. If, after consideration, there is anything we can provide to the Commission in confidence or otherwise that would be of assistance, I would be glad to discuss it.

THE CHAIRMAN: What would you say to this: would you give it to us in confidence -- we don't like hearing anything in confidence, if we can avoid it, from the advocates of one group unless there is a representative of the other group present. Would you mind if there is one of the barristers advocating the western route present when you give us that confidential information?

MR. BOYD: I would certainly have to take very careful instructions before I could answer that question.

THE CHAIRMAN: You would like to discuss that with your head office?

MR. BOYD: Oh, yes.

THE CHAIRMAN: Well, we will resume this evening.

COMMISSIONER GAINER: Before we do, Mr. Chairman, could I put this thought to you, Mr. Boyd, that perhaps it might not be so relevant for us to





set a gross figure against concentrates or mining supplies moving into Pine Point in the major categories here, except, to my mind, this one category of freight moving north to the Lake Athabasca traffic which is not common to both routes, and since it is a general category -- a mix -- would it be reasonable to ask for a figure to be set up against that particular tonnage. It is about 100,000 tons moves in there. That is to Lake Athabasca alone. It would not have to be done immediately.

MR. BOYD: If we are coming back tonight, perhaps I can reserve my answer until I can find out from somebody who knows something about these things.

COMMISSIONER GAINER: I would like to say the reason I think this may be relevant is that it is obvious this type of freight -- it is high revenue producing, and this is going to have some effect on shippers in that area as well as on the railroad, and it is something we would have to be concerned with, I think.

MR. BOYD: In judging the comparative routes?

COMMISSIONER GAINER: Yes, in judging whether or not the assumption regarding rail volume versus water transportation seemed reasonable.

MR. BOYD: I will try and give you an answer to that.

MR. FOUKS: Mr. Chairman, Mr. Baldwin and





I agree that if there is any information that is confidential, and it is understood that the public and ourselves in particular should not hear it, that we are quite prepared to allow it to come to the Commission, for your assistance, strictly in confidence to yourselves, and not to us.

MR. BOYD: Thank you. I thought that would be your attitude. I am not surprised.

THE CHAIRMAN: Well, if you feel you can get it between now and this evening, and give it to us in confidence, we will be glad to have it.

MR. BOYD: I doubt whether I could do it this evening.

THE CHAIRMAN: No, I thought not, but just in case you had it, we would appreciate getting it.

We will adjourn now until 8.30, and I think we can finish the matters in the railway brief.

Tomorrow, Dr. Hume has very kindly agreed to stay and give us his brief and the questions we will have for him.

The Denny Lumber Company will have their brief in the afternoon, and then, if satisfactory, we will adjourn until Tuesday morning.

MR. FOUKS: Yes, Mr. Chairman; as long as you don't expect the rebuttal brief by that time.

THE CHAIRMAN: Oh, no, we will give you







reasonable time for rebuttal.

For myself, I have a question I would like to ask, and I will illustrate on the map the problem that runs through my mind. The suggestion that was made that if the railway is built from Waterways, that the freight which now goes into Uranium City would be carried by rail from Waterways to Peace Point or Fort Smith; some have advocated Peace Point and others Fort Smith. I find it difficult to understand how the people in Uranium City would be satisfied to pay additional substantial prices for taking the freight to Peace Point, and then pay to have it carried by water a distance which is practically equal to the distance it is now carried. It seems to me a very substantial increase in freight costs, and that question raises itself.

---Whereupon the hearing adjourned at 5.30 p.m.  
until 8.30 p.m.





--- On resuming at 8.30 p.m.

THE CHAIRMAN: Are you ready, Mr. Rotstein?

MR. ROTSTEIN: Yes, sir.

THE CHAIRMAN: You were going to consider during the adjournment the question that Mr. Gainer put to you about what revenue - - would you repeat the question, Mr. Gainer?

COMMISSIONER GAINER: I think it related to the possibility of setting your incremental figure out against that chunk of general freight which would be the 181,000 tons. That chunk would include both the general Great Slave Lake traffic and the Lake Athabasca traffic, as I recall it from the brief. Were you able to do anything on that, or do you feel that you can say something in regard to it?

A. That is to segregate the revenue portion on the new line for this merchandise?

COMMISSIONER GAINER: Yes, for that general traffic category. I presume this would not be disclosing too much in terms of the other categories which are more specific, like concentrates, lumber and so on?

A. As regards the segregating of it I think the offering of this section here would really disclose the complete configuration, because one can determine commodity rates very easily and make assump-





tions on it as regards the others.

MR. BOYD: Actually, I think, Mr. Chairman, you were discussing it with me at the adjournment, and I should have risen at the opening here. I think I gave that undertaking, and I think I should have been on my feet rather than the witness. We think the most effective way of dealing with it is this, in the light of what has been said today, that perhaps the three members of the Commission might review in their own minds what has developed and what they would like, and instruct the Secretary to let us know what you would like in a more specific way, and let us handle it in that way. We will certainly give you whatever information we possibly can, and if we cannot give it we will say why we cannot give it and under what terms we would be prepared to give it. Would that not be the most efficient way of handling it, so that we will not be dealing with anything piecemeal.

THE CHAIRMAN: Possibly, because we do not want to go beyond - -

MR. BOYD: No, and we do not want to refuse anything unnecessarily.

THE CHAIRMAN: So far as that is concerned, is not that the general freight traffic that is going north concerning which all rates are published - - machinery, food, clothing, and so on?

MR. BOYD: The rates on commodities are published, but not for this place, because there is





no railway there.

THE CHAIRMAN: Yes, that is so.

MR. BOYD: I mean, the rates on those commodities or class rates, or whatever you want over a given mileage are published, but that would not be too realistic information, actually. If the Commission agrees with my suggestion it might - - just by studying the question and being allowed a little time in which to consider it might do away with the difficulties we are running into. We will endeavour to give all the information we possibly can, consistent with our own interests.

COMMISSIONER GAINER: I think that would be all right from our point of view, but some of this information might not be made available to those who are interested in it.

MR. BOYD: In regard to any evidence we gave to the Commission without any "confidential" tag on it we would like the Commission to feel free to give it to anybody who might want it, but anything that - -

THE CHAIRMAN: With regard to the 181,000 odd tons of freight which is described as general traffic you do not feel now that you can tell us anything about how much of the \$3,600,000 is to be attributed to that?

MR. BOYD: That is so, sir.

THE CHAIRMAN: Can you tell us how much of that traffic is traffic going to Lake Athabasca







or Uranium City, let us say?

MR. BOYD: I do not know whether we are factually able to give it. Have you got that?

MR. ROTSTEIN: We can get that, Mr. Boyd.

MR. BOYD: You do not have it, though?

MR. ROTSTEIN: No.

THE CHAIRMAN: My recollection is that we got it from Northern Transportation, or somebody who has been associated with it, that there were 20,000 tons which went north on Lake Athabasca and 160,000 tons that went east to Uranium City.

MR. FEEHAN: I think it was 20,000 tons to the north, and approximately 100,000 tons to the east to Uranium City.

MR. BALDWIN: That was Mr. McCullum the local manager at Waterways. I was not in Yellowknife until later, but someone said that Mr. Broderick had intimated that the 100,000 tons that went into Waterways was approximately correct, but it was 93,000 tons going north into the Great Slave Lake area.

COMMISSIONER THOMPSON: No, it was 193,000 tons handled, 100,000 of which went to Uranium City, and 93,000 tons went on down the river or across the lake - -

MR. BALDWIN: Yes, that was Mr. Broderick's statement.

COMMISSIONER THOMPSON: - - or, at least, was handled at the border.





MR. ROTSTEIN: I wonder, sir, if we can break this down as between Athabasca and Great Slave Lake which I gave you before, and include it with our general information to you?

THE CHAIRMAN: In the information you are going to supply us?

MR. BOYD: That is really the basis of the information which we will, in turn, get from Northern Transportation.

THE CHAIRMAN: Yes.

COMMISSIONER GAINER: I suppose part of the purpose in thinking this information might be relevant is that we will have to be concerned to some extent with the effects not only on the railroad but on the shippers in this region, and it raises this question as to whether it would mean now - - let me put it in another way. On what basis would it be assumed here that the railroad would or could count on the total of the traffic moving down presently from Waterways so that trans-shipment, we will say, would take place at some other place other than Waterways? What I mean is how can you be sure, according to the assumptions in your calculations, that the railroad would, in fact, be able to acquire all the tonnage presently moving into Lake Athabasca as well as - - well, that is the primary item?

A. The basic consideration here was the question of costs, and we have estimated that the cost of the combination rail-barge movement into the Athabasca area





would be lower than the present cost of the barge movement. The barge operates under - - it is a very high cost operation at the present time. A great portion of the costs are associated with a barge movement in the area between Fort Smith and Fort Fitzgerald.

MR. FEEHAN: I think Mr. Gainer was referring to the Uranium City area.

A. There exists around Embarrass Point a portage which is a very costly operation.

THE CHAIRMAN: What is that?

A. In the Embarrass area there are significant costs related to moving goods along the waterway into Athabasca. This is due to water levels which occur during different parts of their seasonal operation. A railway would avoid the costs which are peculiar to this operation, and we have estimated that the total cost of rail movement to Peace Point and then a barge movement from Peace Point into the Athabasca would be lower than the present cost of moving goods from Waterways via the water route into Lake Athabasca. It is on this that we really base our estimate that the railway would be carrying this traffic.

THE CHAIRMAN: And all those calculations in regard to that 100,000 tons of freight are based on that, are they, Mr. Rotstein - - on the item of cost?

A. Yes, it is based on cost, and this is the consideration - - in other words, you are really combining the best of two different forms of transporta-







tion - - the barge which operates from Peace Point into Lake Athabasca and which has a relatively free movement on that operation, and the low cost of rail operation up to Peace Point from Waterways, and this would save a movement of that sort rather than the present movement, which, as I mentioned before, is a relatively higher cost operation. In addition, it should be mentioned that the movement today is a very seasonal one, and goods can only move during the summer months of the year. With a railroad you would avoid this seasonal operation. You would have a 12-months operation, and there are certain added benefits which result from such an all-year-round movement in the sense that people in the Uranium City area, or people around the Athabasca, do not have to keep high inventories of goods, and they can really import or export goods as the case may be as and when required, and there are actual costs associated with maintaining inventories of this sort.

THE CHAIRMAN: Do you mean, going back to that question of costs again, that you have assumed the costs of going by water from Waterways to Uranium City is very considerable? You mentioned a portage around Embarrass. Are you assuming that is a portage that is used for all freight that goes through that way?

A. I am sorry, it is not a portage. It is really a dredging operation that is required. In other





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words, they require to dredge a certain area to maintain a channel for the movement of goods into Lake Athabasca, and this appears to be a very high cost operation.

THE CHAIRMAN: Can you tell us how high the cost is?





A. I really can't quote a cost, sir.

We have been given some confidential estimates, and we don't feel that ---

THE CHAIRMAN: Where did you obtain the confidential estimates?

A. We have discussed -- these costs would be available from the Dominion Government, and this would indicate the costs which are directly connected with this particular operation here.

THE CHAIRMAN: Has someone in the Dominion Government told you that if the railway were to be built along that route the dredging costs would no longer be incurred?

A. The assumption is that Northern Transportation would not have to continue along that route and therefore there would be no need to continue the dredging operation.

COMMISSIONER GAINER: Mr. Rotstein, without trying to embarrass you in any way, we seem to have evidence earlier that, as is often the case, the water transport will be cheaper on a ton-mile basis than rail and that this seems to be the case even in the Upper Athabasca. We have evidence of Mr. Horton in Yellowknife, who is in the newspaper publishing business there. He suggested on page 24 of September 2nd, Volume No. 1 of the transcript: "The rate on newsprint for instance from Edmonton to Waterways by rail is \$1.77, but from Waterways to





Yellowknife by barge it is 2 cents less or \$1.75 and a much greater distance is covered." And this would include the portaging operation in the case of freight going to Yellowknife. Undoubtedly, this is only one commodity, but the suggestion since has been that it could, in fact, add a great deal to the cost of shipping goods either into Uranium City or Great Slave Lake, as to the 250 miles to Peace Point and then barging it as well, either into Lake Athabasca, or it could be barging across the lake, wherever the terminal is, on Slave Lake; and from anything that is even superficially in the average revenue figures that have been assumed for the general freight, general traffic, this would suggest that the movement of general freight by rail, the movement of 200 miles, is not going to be a very cheap movement; but, in any event, it does not seem to be competitive with existing water rates, and this is the thing that we are concerned with at the moment.

A. I think one has to be careful in singling out individual commodities and using current rate levels or estimating rates which would be in operation at such time as a railway would come into being. I don't know exactly what assumptions are made in this quotation here, but it appears to me that, since the cost for the total movement would be lower, the tariffs should reflect these costs and that this, in turn, should result in a level of rates which would be lower







than the present rates being charged.

As I say, one has to be cautious in singling out certain commodities, because there are tremendous discrepancies even in the railway, and I am sure, perhaps, even on a mileage basis, you could see discrepancies. However, one cannot apply present rates; I am sure a different rate structure would come into being on the completion of a railroad.

COMMISSIONER GAINER: In any event, this is a matter of some concern, particularly since barging is going to be necessary in any event for shippers in the Uranium City area, and there is going to be a point of operation no matter what happens, and unless the rail movement per mile is a good deal cheaper or, at least, competitive on that 200 miles, then I think perhaps for a large part of the year, if a road doesn't go in, or something, that the railroad might be making rather a heroic assumption in putting all this freight into the potential category.

A. Well, I don't think it is an estimate; I think it is based on costs, and we have good examples of that, for instance, in the present merchandise service of the railways. The idea is that goods will be moved by truck and rail from Point A to Point B and the railway will determine how it is to be moved between these two points and the decision will be made on costs, a combination of both ship and





rail, and I think in this instance the same would come about.

COMMISSIONER GAINER: So that there is no doubt in your mind from the way you have put your figures together that this type of general traffic which, as we recognize, carries a relatively high rate -- those rates would be competitive with water transport?

A. Yes. I would also say that a railroad should also improve the rates as regards the remainder of the traffic going up the Great Slave. As of today, the only means of transportation along the eastern route is via barge, and given a tariff for all shippers it would be reduced.

I would like to read to you a statement we prepared here:

At the level of rates we used in calculating our tonnage for revenues in waterways traffic the transportation cost for shippers and consignees in the Athabasca River and Lower Mackenzie Valley. In addition, these benefits would be in effect on an all-year-round basis.

MR. FEEHAN: I wonder if I might put a question on the map to the witness?

THE CHAIRMAN: In a few moments.

COMMISSIONER GAINER: It is on that particular





point that I don't think it is yet clearly established to satisfy this Commission, and it is for this reason that we are so interested in satisfying ourselves that the water versus railroads on this distance would give us that kind of relationship. I only want to say that to indicate the reasons why we have shown some interest in the assumed rates without trying to be inquisitive for other reasons about the rail operation.

THE CHAIRMAN: Mr. Boyd, on this question of confidential information, I take it this statement that has just been read by Mr. Rotstein is one that you have asked us to accept on behalf of the railway companies?

MR. BOYD: It has come out in a very naive fashion. Yes, it was prepared for the railway.

THE CHAIRMAN: And I think you would like us to accept the information on pages 20 and 21 without asking for the details concerning it?

MR. BOYD: Without asking for more details than we have already given, yes.

THE CHAIRMAN: It has been said on behalf of Northern Transport by their representative that he has no difficulty in taking freight from Waterways to Uranium City, no more than from Peace Point to Uranium City; he sees no reason why the cost of transport from Peace Point to Uranium City would be anything less than the cost of taking it from Waterways to Uranium City. He sees no more than two







or three days difference in the transportation season. There is no difference between the transportation system; he sees no advantage at all in taking goods, as you have suggested, and, as he sees it, it just means all the freight going to Uranium City will have to bear the extra transportation cost from Uranium City to Peace Point.

Now, there is a very great difference between his proposition and the conclusion you have just stated.

MR. BOYD: As stated, it is quite so.

THE CHAIRMAN: What have you to say about that?

MR. BOYD: He is talking about his costs which do not include the cost paid by the people in Canada for dredging. Mr. Rotstein is referring to overall costs, the costs the Dominion Government incurs in the overall capacity, the dredging, so to speak.

THE CHAIRMAN: I put that to him; I said: "Is there a chance of having that dredging reduced?" And he says No. He says there has never been any suggestion that it could be closed.

MR. BOYD: We have gone on the assumption, and not without some basis for doing so, that the barge rate south of Peace Point for practical purposes would be discontinued.

THE CHAIRMAN: There is a very remarkable discrepancy between these two statements.

MR. BOYD: There is only one source which could clarify the issue, and that is not this railway





company, a source which concurs in those costs at the present time.

But there is another aspect to it -- I don't know if Mr. Rotstein has dealt with it -- and that is the ultimate effect of competition, what the ultimate effect of competition to the railway company would be.

THE CHAIRMAN: Is there an advantage?

MR. BOYD: I would suspect that it might result in the railway being the stronger competitor.

THE CHAIRMAN: But you have advanced the suggestion that it is a bad thing to have competition for the railway from the Mackenzie Highway?

MR. BOYD: It would seem rather silly that a barge route, which involves costs to the Dominion Government, should be competing with the railway, which presumably also will be built by the public, and the two Crown bodies competing in it would seem to be a waste. That would suggest that it should coordinate with a rail service if it was built on that line. You apparently have access to information that we haven't.

THE CHAIRMAN: I phoned a friend of mine in Northern Transportation and said, "Would you tell me about this?" and he said: "I can tell you this. I can't tell you the source of it at the moment, but here it is." It took me ten minutes to get the information.





MR. BOYD: I don't know what I can say in reply to that. I have no means of knowing what he told you.

THE CHAIRMAN: In the light of that would you treat a little more seriously, perhaps, than you have been doing our request for a breakdown of these figures. We feel we must analyse them carefully because we don't know the other assumptions made by the railways which may be inaccurate. Certainly, you have based assumptions today on a good deal of inaccurate information, and we, as pure novices in the railway field, have had to delve into the problem and find out what the inaccuracies are.

MR. BOYD: Well, without conceding that, I was going to assure you that there is no need to ask us to carefully consider. Whatever information the Commission requests, I assure you we will carefully consider. The mere fact that you ask, we take it you need it without any special request.

THE CHAIRMAN: Well, I would like to see a thorough analysis of the rates as between water and rail going from Waterways to Uranium City, and from Waterways to the Bell Rock harbour, and to Yellowknife, because it would seem to us that we must be careful in writing a report that we don't advocate something which is going to impose a heavier freight burden. It is heavy enough now. We don't want to impose a heavier one on these







people in Uranium City and Yellowknife, and, at the moment, it does seem to me Mr. Rotstein has been advocating something which means a very considerable increase in the freight rate on 100,000 tons of freight going to Uranium City.

MR. BOYD: That was not our conclusion.

THE CHAIRMAN: That was not your conclusion. Your suggestion is that the freight will be lower, but, if it is going to cost the same amount to go from Peace Point to Uranium City as it now costs from Waterways, it is inevitable the price will be higher.

MR. BOYD: That portion of the haul is beyond the control of the railway. We would assume that carrier would pattern his rates in accordance with his costs.

THE WITNESS: May I just say that in dealing with costs, if you just take an average cost on the system as a whole, one cannot just apply an average cost in this particular situation. In other words, the average cost really includes within it low cost movements between specific points as well as high costs peculiar to specific problems that the Northern Transportation faces. They have a portage problem and they have this dredging problem at different points along the line. The idea is, when you lump all these costs peculiar to that type of operation, and you divide over the







length of the line, or by whatever unit you wish, you get an average cost. That average cost should not be applied indiscriminately along any point on the line. What is significant here is not the average cost of Northern Transportation, but the actual cost of moving goods between Peace Point and Lake Athabasca, and, given no peculiar obstructions in this area, it is generally known that water transportation is a very cheap movement, and from our information there are no obstacles in the movement from Peace Point to Athabasca; this would result in a very low-cost operation for the movement. Combined with a low-cost operation, the total cost, we feel, would be lower than the present cost of moving by barge from Waterways into Athabasca, which is associated with specific costs related to dredging and costs which could be avoided. You would avoid certain costs by having the rail move up to Peace Point. And other savings might be in the portage; I believe there is a portage further north which would be avoided by having a rail line to Great Slave Lake, and one would have to really segregate the costs associated with a particular movement to arrive at a real cost on a particular haul.

THE CHAIRMAN: Mr. Rotstein, you mentioned the costs of these impediments to navigation between Waterways and Uranium City. Tell me, please, what your information is as to what those costs are?





A. I believe, sir, that these costs could be made available to you, and I really don't know if I can impart them to you personally since they were given on a more or less confidential basis.

THE CHAIRMAN: You can't tell us what they are? Can you tell us where you got them? Would you like an adjournment while you work those out?

MR. BOYD: That might be useful, sir.

---Short recess.

MR. BOYD: Mr. Chairman, during the adjournment we have given very careful consideration to the effect of the information which you say you have obtained from the Northern Transportation Commission and, of course, we accept your statement. In the interests of perhaps shortening the proceedings as well as to make it very clear, I would like to make this statement: that information does not alter the views we have expressed in our submission. First, the view we expressed in our submission that it would be logical to assume that the barge operations would be reorganized, we still think is a logical assumption to make, and if that assumption is unfounded, and the barge operation should continue, we still expect that we would achieve the revenues and the tonnages which we set out in the brief.

Furthermore, we would expect to achieve





these revenues and tonnages and still maintain the statement made by Mr. Rotstein a few minutes ago that there would be no increase in the overall transportation costs to shippers and consignees in the Lake Athabasca area.

Furthermore, so there will be no mistake as to the tonnages and revenues we are discussing, I am authorized to state that the general traffic of the Lake Athabasca area would be in the order of an annual average of 110,000 tons with revenues of approximately \$600,000.

THE CHAIRMAN: How many tons?

MR. BOYD: One hundred and ten thousand -- that is, about 110,000, with revenues of approximately \$600,000.

THE CHAIRMAN: \$600,000 to the railway?

MR. BOYD: Yes, sir.

THE CHAIRMAN: That is, to the railway company for carrying goods from Waterways to Peace Point, is it?

MR. BOYD: Well, we are talking about the Lake Athabasca area.

THE CHAIRMAN: And the anticipated revenue is \$600,000?

MR. BOYD: Yes, sir. We go further and state that the traffic to Great Slave Lake and beyond would, in our estimation, achieve an average annually of 70,000 tons, with anticipated revenues of about \$1,110,000. In each case I am speaking of general







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traffic. I hope, sir, that that perhaps clarifies  
our position. It is in as concise form as I can  
put it.

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THE CHAIRMAN: Now, you have made assumptions and I would like to know the reasons for the assumptions. When I have asked the witness for the reasons he told me there is a - -

MR. BOYD: I am sorry, I should have added one thing further - - -

THE CHAIRMAN: He told me that there is a portage at a place I have never heard of. When two trans-continental railways produce a witness giving what we think is important evidence, and he says the reason for an important assumption is a portage that has never been thought of it is very disturbing.

MR. BOYD: He corrected it.

THE CHAIRMAN: He corrected it after cross-examination on our part. We would like the reason for these assumptions of Mr. Rotstein. Mr. Rotstein is arguing his assumptions very ably, but we are interested in facts.

MR. BOYD: The way we have put it now - - whether or not the assumption is justified the figures we have given in our brief of revenues and tonnages with respect to the Waterways route stand, in our opinion.

THE CHAIRMAN: Well, we are bound to come to the conclusion at the moment that we cannot accept the estimates when they are based on such erroneous assumptions as saying there is a portage at Embarras .





That was Mr. Rotstein's first reason which he gave, and he had to be coached before he corrected the error.

MR. BOYD: I think he started off by saying there was a portage at Fort Fitzgerald, and then he said it was a dredging operation.

THE CHAIRMAN: He started explaining the high rates to Uranium City by telling us there was a portage at Fort Smith and, of course, that was wrong, and then he made another error and said there was a portage at Embarras, and then somebody came to his rescue and pointed out that it was not a portage but that it was some dredging that was going on.

MR. BOYD: Be that as it may, my Lord, I hope the statement I have made resolves any doubt that exists in the minds of the Commission as to our ultimate position.

THE CHAIRMAN: Yes, that is very clear, but we would like to know what the basis of your argument is.

MR. BOYD: The assumption that the route should be closed or discontinued in part?

THE CHAIRMAN: Yes.

MR. BOYD: I think, as I have the information, it is based on the assumption that the people of Canada through the Government would no longer continue to incur unnecessary costs to duplicate transportation facilities.

THE CHAIRMAN: Have you got that information





from a Department.

MR. BOYD: This is our assumption, sir.

We think it is logical that when the question is faced a decision will be made, but now we go further and say even if it is too much to expect a logical decision on that point, even if it remains open, we still expect to achieve the same tonnages.

THE CHAIRMAN: Why is it that you expect to take all that? Let us suppose it remains open for the moment. As you see it, even if it does remain open you expect to get that 110,000 tons of freight going to Uranium City. Why do you expect that.

MR. BOYD: Well, now, I cannot answer that in detail. All I can do is act on the advice of officials and men who know these things on the railway. That is the statement I was authorized to make on behalf of the railway.

THE CHAIRMAN: Is it not just about as far from Peace Point by water to Uranium City as it is from Waterways to Uranium City.

MR. BOYD: I am not giving any answers on geography because I do not know that country.

THE CHAIRMAN: Mr. Rotstein does not know that country. He thought there was a portage at Embarras .

MR. ROTSTEIN: May I correct that? I did correct myself, and it was significant in my mind that there were costs peculiar to that movement there.







The significant point is that these costs exist, and they are peculiar in the sense that a particular type of operation must be performed to carry the traffic from Waterways out of that portion of the route, and I made that remark - - the significant thing was the costs which would be included in that specific operation.

THE CHAIRMAN: Do you know now if you are going to give us, before we adjourn, what you knew of the costs of the impediments in the transportation between Waterways and Uranium City?

MR. BOYD: That is the additional thing I forgot to mention after we came back. The information we had came from an official. I will ask him to name the official.

MR. ROTSTEIN: I would refer you to Mr. J. E. Kellett, District Engineer, Department of Public Works, Edmonton.

MR. BOYD: I should add, sir, that we were not authorized to disclose the information, but it should be readily available to the Commission from the same source where we got it.

THE CHAIRMAN: Well, Mr. Grimble has given us a statement. Did you get this from Mr. Kellett?

MR. GRIMBLE: No, sir, I got that in Ottawa.

THE CHAIRMAN: This is the cost of the dredging, is it?

MR. GRIMBLE: Yes.

THE CHAIRMAN: Let me be sure that I understand





this statement. Would you come up here and look at it with me. What does this first column refer to?

MR. GRIMBLE: They have what is called contract work which is given to other people to do, and it is done on a contract basis, and they have this on a card system in Ottawa. They also have their own forces which they call plant number 250 and 252. These are dredges operating on the river, and these are kept in a separate record in Ottawa. In any one year they will have charges against contract work, and charges against each dredge, and over here I have the total.

THE CHAIRMAN: Now, what is plant 250, do you know?

MR. GRIMBLE: It is a certain type of dredge. They have a dredge with a bucket or a scoop on it.

THE CHAIRMAN: Where was it operating?

MR. GRIMBLE: In this particular case it is based at Waterways, and it would operate between Waterways and the Delta and Lake Athabasca.

THE CHAIRMAN: Which one operates at the Delta?

MR. GRIMBLE: I do not know, sir. They move them around as is expedient, and this year they are moving them more than normal.

THE CHAIRMAN: \$153,000.00 was the total in 1957 for dredging between Waterways and the Delta?

MR. GRIMBLE: Yes, sir.

MR. BISHOP: Mr. Chairman, Mr. Broderick





advised us in recent years - - I think probably it was just this year that he was very pleased to find that the dredges would come to work at any location they were asked for. In other words, if he had a boat with a string of barges in trouble, why, he would ask for a dredge and they would come and work on the area where he was stuck. In previous years they apparently worked just on a pre-arranged program and if you were stuck and the dredge did not get there until the next week then you had to wait until the dredge got there. So, I do not think that you could say that either dredge worked in any particular area - - that is, at the Delta or - - -

COMMISSIONER THOMPSON: Did some of them work at the harbour up at Clearwater? Did they have to dredge that?

MR. GRIMBLE: It is not always clear. They have dredging at Clearwater. These are direct costs. There is overhead and supervision on top of that, and navigational aids which come under the Department of Transport.

THE CHAIRMAN: This will be marked as an exhibit.

--- EXHIBIT NO. 55 (d) Document giving costs of Athabasca and Clearwater dredging from 1911 to 1957.

THE CHAIRMAN: Mr. Rotstein, would you look at exhibit 55 (d). Do you feel at liberty to tell







me whether the figures that appear on that document differ materially from the figures you have been given as to costs of dredging.

MR. BOYD: There is the total figure on the righthand side.

MR. ROTSTEIN: Is this the total here, sir?

THE CHAIRMAN: Yes, \$153,000.00 in the year 1957.

MR. ROTSTEIN: In fact, this is a higher figure than the one we have received, sir.

THE CHAIRMAN: It is?

MR. ROTSTEIN: Yes.

THE CHAIRMAN: Now, you have suggested, I think, Mr. Boyd, have you not, that the cost of taking - - at least, what the owners of the freight will pay for their freight being taken from Waterways to Peace Point; 110,000 tons would be \$600,000?

MR. BOYD: Revenues, yes.

THE CHAIRMAN: Revenues to the railway company?

MR. BOYD: Yes.

THE CHAIRMAN: So the total freight on your estimation that will go to Uranium City over your railway when it is built will pay \$600,000 for the haul from Waterways to Peace Point?

MR. BOYD: That would be the railway's revenue.

THE CHAIRMAN: Well, that is what will have to be paid?





MR. BOYD: Actually, I think it will be a through movement, and it would be a matter of division using the two means of carriage - - rail and water. He might pay a single rate which will be divided.

THE CHAIRMAN: Divided between the railway and the waterway?

MR. BOYD: Yes.

THE CHAIRMAN: How much of that is going to go to the railway?

MR. BOYD: No, this will be our revenue.

THE CHAIRMAN: The railway's revenue? That is what the railway will receive for taking the freight from Waterways to Peace Point?

MR. BOYD: Yes.

THE CHAIRMAN: So to take the freight by rail - - just make sure we have got this straight; to take that freight from Waterways to Peace Point is going to cost \$600,000.

MR. BOYD: I am sorry; I did not hear the first point.

THE CHAIRMAN: To take that freight by rail from Waterways to Peace Point is going to cost \$600,000?

MR. BOYD: The shipper - - you say "cost", and I always think of railway costs.

THE CHAIRMAN: Yes. It is going to cost the shipper \$600,000, otherwise there would not be any revenue.

MR. BOYD: Yes, the cost to the shipper.





THE CHAIRMAN: Now, the cost to the shipper, taking your proposed route, will also include the water haul from Peace Point to Uranium City during the summertime?

MR. BOYD: Yes.

THE CHAIRMAN: What would you anticipate that would be?

MR. BOYD: Well, sir, I have not any figures on that.

THE CHAIRMAN: Have you any idea?

MR. BOYD: No, personally I have no idea. I can inquire.

THE CHAIRMAN: Do any of your associates here know?

MR. BOYD: I say I can inquire from them.

THE CHAIRMAN: Yes. Would you?

MR. BOYD: Can anybody answer that. I am sorry, sir, but my present adviser is unable to tell me the answer to that question at the moment. All we can say is that so far as the portion of the water haul from Peace Point to the destination on Lake Athabasca is concerned we feel the cost of that portion of the haul to the shipper or consignee should be less than he is now paying from Waterways to the same destination.

THE CHAIRMAN: How much less do you suppose it would be?

MR. BOYD: Again, sir, it is a matter for







Northern Transportation or the water carrier.

THE CHAIRMAN: You have made an assumption in your brief. You have told us you expected to get all this freight, and I would like to know why. It seems to me it is a very important matter which should have been looked into before you could arrive at an assumption. Do you not think so?

MR. BOYD: With great respect, we are dealing with a hypothetical situation. We are dealing with a railway which is not in existence and traffic which has to be estimated and - - well, I do not want to say any more. I think we have done the best we can, and our views are expressed with sincerity. They may not be as strongly supported as you would like, but they are not presented loosely.

THE CHAIRMAN: There is no doubt about it that we can find out by a matter of half an hour's inquiry during the day how much it would cost to take that 100,000 tons of freight from Waterways to Uranium City.

MR. BOYD: I suppose so. Not from us.

THE CHAIRMAN: The railway could find out what we could find out in the morning.

MR. BOYD: I do not think we could find out.

THE CHAIRMAN: You can telephone the office of Northern Transportation, can you not?

MR. BOYD: They are not obliged to give us







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any information, sir.

THE CHAIRMAN: Have you asked them to?





MR. BOYD: Well, sir, I don't know the answer to that. I haven't.

THE CHAIRMAN: Have you tried to get that information, Mr. Rotstein?

A. Not myself, sir.

MR. BOYD: Do you know anyone who did, in our organization?

A. I believe that some information exists that was given in regard to particular movement by Northern Transportation. This was quite a while ago.

THE CHAIRMAN: Let me put it this way. This is how it seems to me. If it costs the same amount to take freight from Waterways to Uranium City as it would to take freight from Peace Point to Uranium City ---

MR. BOYD: By water in each case?

THE CHAIRMAN: By water in each case. You were arguing before the adjournment that it would be an advantage to take it by railway because you would save the cost of dredging by the delta.

MR. BOYD: I don't think it was in that sequence. The statement was that it would be logical to assume that service would be discontinued because of the cost to the country of the operation together with the cost of dredging.

THE CHAIRMAN: It would be saved?

MR. BOYD: Would be saved.

THE CHAIRMAN: What would happen would be





that the country would save the cost of dredging and the people in Uranium City would pay the railways \$600,000. Now, it is a bit of an inquisition.

MR. BOYD: With great respect, sir, you have left out the second very important statement I made. I said that that should still take place without any increase in transportation costs to shippers in the Lake Athabasca area.

THE CHAIRMAN: Yes, but you are still going to add \$600,000 to the cost, because that is the revenue to the railway, so there is going to be that added. I don't know how you can say that it is going to be reduced to the people in Uranium City when you are adding \$600,000 to start with between Waterways and Peace Point, and you have no idea what it is going to be between Waterways and Uranium City.

MR. BOYD: We have no control over what Northern Transportation will charge over their portion of the service, but it is a natural assumption that when they are travelling over a shorter distance it will be less.

THE CHAIRMAN: How much shorter is the distance? Do you know, Mr. Rotstein?

MR. ROTSTEIN: I believe we have the distances here.

MR. BOYD: And I believe better operating conditions; that is clear channels, and so forth.







MR. ROTSTEIN: I believe it is about 70 miles, there will be a 70-mile difference in distance.

What has to be considered here are the real costs which are involved in the total movement. In other words, the dredging costs are borne in the sense in that if they don't appear in the statement of Northern Transportation, nevertheless, they are incurred and there would be a provision for having this type of transportation; and the way in which an aid to transportation comes about is not so important as the fact that it does exist. In considering the economic costs, true economic costs, the total costs, rail and barge, would be less than the real economic costs that exist at the present time for conveying materials and goods from Waterways to the Athabasca area, and we have really based this on the complete costs which would be incurred in both operations.

May I also say that for the construction of a railway we have assumed that it would be in the interests of the people of Canada to curtail another duplicate form of transportation and try and retain that transportation system which will provide the least cost of operation for movement of particular goods as between points rather than maximize the costs which would occur if two duplicate transportation systems were in the area.

THE CHAIRMAN: You have said that several





times, Mr. Rotstein; you always include in your statement this, that the complete costs which would be incurred must be considered. That is what we are trying to get; we are asking you if you have considered the complete costs, and you know nothing about the costs between Waterways and Uranium City and between Peace Point and Uranium City. Perhaps you do.

MR. ROTSTEIN: Well, we have made a computation which would indicate the costs per ton-mile incurred by the Northern Transportation Company, and in basing our conclusions here we have taken into consideration the present costs of their operation and we have knowledge of the unit costs of the rail operation.

THE CHAIRMAN: Would you let us have that computation? That is what we would like to have. You say you have made a computation. Would you let us have that, please? Would you give it to me now?

MR. ROTSTEIN: We have made an estimate of the costs of the movement of goods by barge.

MR. BOYD: Based on what, Mr. Rotstein?

MR. ROTSTEIN: Based on their annual report which is available as well as on information which we had as to the tonnages, moving into the Athabasca area.

THE CHAIRMAN: Well, may we have that estimate? You have referred to it once as a computation and once as an estimate. Would you let us have that,





please?

MR. BOYD: Do you have a lump sum figure, or is it broken down? Do you have to search for it?

MR. ROTSTEIN: We have to search for it, sir.

THE CHAIRMAN: Have you got it in your files here? Would you like another five-minute adjournment?

MR. BOYD: No, sir. I can stand here for five minutes while the witness looks for it. As far as I am concerned, I am not asking for an adjournment.

MR. ROTSTEIN: Could I just have a word with counsel?

THE CHAIRMAN: Certainly.

MR. ROTSTEIN: May I just start, sir, by saying that we have information here which we have been asked not to disclose. This information was given to us on a confidential basis from the Northern Transportation Company, and I believe that this information should be available to the Commission as it was made available to us.

This information would show the tonnages and the mileages for the total operation and ---

THE CHAIRMAN: Which is the total operation? You mean from Waterways to Uranium City?

MR. ROTSTEIN: We have more than that; there are tariffs to the Athabasca, Fitzgerald areas, and we have, by use of their annual statement and





this information which we have received from them, computed a ton-mile cost. This could be easily done, sir, and I ask that I not give it here publicly because they did give the information in confidence to us.

I would like, however, to present the following which might give the picture of what is involved in terms of the cost to shippers in the Athabasca area.

We have estimated that for the total revenues which the Northern Transportation ---.

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MR. BOYD: May the witness continue, Mr. Chairman?

MR. FEEHAN: I was pointing out to the Chairman that this confidential information is set out in the B. C. Report.

THE CHAIRMAN: Perhaps we can show this to Mr. Rotstein and he can tell us if that is the information which he has.

MR. BOYD: I wonder if the witness could at least complete the statement he was in the process of making.

THE CHAIRMAN: That is fine. You go ahead.

A. The total value of shipments made to the Athabasca area is at the 1.3 million level.

THE CHAIRMAN: When you say the total value of shipments . . . ?

A. This is paid by shippers for goods moved into the Athabasca area.

THE CHAIRMAN: And it is how much?

A. \$1.3 million. As mentioned before by the railways, the revenues which would accrue to a rail line to Peace Point would be some \$600,000. This would leave a revenue of \$700,000 for the barge movement from Peace Point to points in the Athabasca area, and we feel that this \$700,000 would be adequate to meet the costs of operating such a barge movement.

THE CHAIRMAN: Is that how you arrived at your assumptions?





A. Well, we feel that we could operate a movement from point of origin to the Athabasca area which would combine rail and barge service for the revenues which I have just given to you.

THE CHAIRMAN: And you say that the freight paid by shippers for goods to the Athabasca area is \$1.3 million?

A. That is correct.

THE CHAIRMAN: That is what it costs them to get their goods in there?

A. Yes, at the present time.

THE CHAIRMAN: Where do these goods come from?

A. They are loaded at Waterways for furtherance by Northern Transportation Company.

THE CHAIRMAN: That is what they have paid to Northern Transportation, is it?

A. Yes, sir, that is the total which has been paid to Northern Transportation for shipment of these commodities.

THE CHAIRMAN: That is what Northern Transportation has got -- \$1,300,000 -- that is the freight just from Waterways?

MR. BOYD: From Waterways.

THE CHAIRMAN: Just from Waterways?

MR. BOYD: That is what I understand.

THE CHAIRMAN: How many tons of freight is it?





A. This is the 100,000 tons which is the figure we gave to you previously.

MR. BOYD: I think I said about 110,000.

THE WITNESS: Yes.

THE CHAIRMAN: 110,000 tons: so, you are going to charge \$600,000 for the rail haul, and you think the barges would operate for \$700,000 from Peace Point, do you?

A. Yes, sir.

THE CHAIRMAN: What makes you think that?

A. This is based again on our estimates as to what the costs would be for movement by barge from Peace Point into the Athabasca area.

THE CHAIRMAN: How carefully have you estimated that? What have you done about making those estimates?

A. As I say, we estimated that on the costs which we feel are peculiar to the movement for that portion from Waterways to Athabasca. We have reduced that and we have made assumptions as to what the cost would be in an operation which is relatively free from barriers of this sort -- dredging, as it were, in this instance.

THE CHAIRMAN: Well, what have you done in order to estimate it? Is your company in the waterways business somewhere, or have you compared costs with barging somewhere else, or have you gone to Northern Transportation and asked them what they think







it would be, or have you gone to Gunnar Gold or the Hudson's Bay Company? If your estimate is arrived at only by subtracting 6 from 13, that is one thing, isn't it?

A. Well, as you note, sir, we allow a higher revenue for the barge movement, which would be a shorter haul movement than it would for the railway for a smaller revenue.

COMMISSIONER GAINER: Would it be fair to summarize this: this would leave your moving by barge from Peace Point to Uranium City -- your figures would indicate this could be done for about half the cost of the existing barge movement from Waterways to Uranium City. 700,000, we will say, against 1.3 million -- or, let us say 1.4 million if you want to throw in the dredging charges, and that this movement which is some 60 miles less in total could be done for half the cost of the present operation? Would that be a fair interpretation of the result here?

A. Yes, I would say this would be in line with our reasoning.

COMMISSIONER GAINER: And you would argue, then, that this seems reasonable for the haul from Peace Point, that the better channels would be sufficient, and the 60 miles shorter distance would be sufficient, to reduce the cost by half?

MR. BOYD: Mr. Rotstein said costs, and he





is talking about costs to the shipper. Are you using "costs" in the same way?

COMMISSIONER GAINER: Yes, or revenue to the barge operation.

MR. BOYD: I was wondering if you were speaking of the cost to providing the service, which is not the same thing.

COMMISSIONER GAINER: Well, I think for our purposes, we have to equate these things, since we are talking about revenue of 1.3 to Northern Transportation -- assume away a profit and add the dredging, and even at cost it would be 1.4.

MR. BOYD: Their revenues?

COMMISSIONER GAINER: Yes.

MR. BOYD: Revenues to the carrier, or cost to the shipper?

COMMISSIONER GAINER: Yes, and the equivalent figure would be 700,000 on the Peace Point barge movement as a residual of the 1.3, less the 600.

A. Yes. Now, these are broad estimates. The assumption here, of course, is that even -- well, we really acted on the basis of the best information we have, and in discussion with Northern Transportation personnel and with Mr. Kellett as to the barge operations at the present time, and it was our conclusion that it could be possible for a railway company to operate a rail barge movement which could operate service at the same rates which are offered today by





the Northern Transportation Company.

COMMISSIONER GAINER: What would happen supposing Northern Transportation wanted to persist in its Waterways operation, and let us say it also went into Peace Point? How would the shipper react if he had the option of either shipping from Waterways by barge for the 1.3 million, or moving it by rail for 600,000 plus any figure above 700,000 that Northern Transportation felt they could and might charge? In other words, so that the total cost might well be greater than shipping it by Waterways; in other words, can you be sure that a competitive carrier would, in fact, close down one operation and come into another operation at a rate which would make it attractive to move on the combined movement?

A. I fail to see your point.

MR. BOYD: Are you asking the witness to make one more assumption as to what a shipper would do under certain circumstances?

COMMISSIONER GAINER: Yes, I would certainly think that may be a good idea, because, after all, the shipper will have the option in the end, possibly, as to what combination of carriers he uses.

MR. BOYD: Well, we did earlier in the proceedings -- and I think it is an answer to your question -- give our statement, and whether you accept it is up to the Commission.

COMMISSIONER GAINER: But I haven't replied







to that.

MR. BOYD: I am sorry to interrupt you, sir.

THE CHAIRMAN: Where did this figure of \$1.3 million come from?

A. This is an extension of rates and actual goods which moved into the Lake Athabasca area.

THE CHAIRMAN: Did Northern Transportation give you that?

A. By Northern Transportation Company.

THE CHAIRMAN: They told you their income was \$1.3 million for the 110,000 tons?

A. We computed that on the basis of the rates which they gave us and the tonnages which were handled.

THE CHAIRMAN: You calculated that?

A. Yes.

THE CHAIRMAN: From information they gave you. Did you check with them to see if the figure was correct?

A. No, sir, we took their basic information and developed it for our purposes.

THE CHAIRMAN: You say you have had some discussions with personnel of the Northern Transportation Company: did anybody in Northern Transportation tell you they could carry from Peace Point to Uranium City all the goods for \$700,000 that they now get nearly twice that amount for going from Waterways?

A. We have not discussed this matter with them.







THE CHAIRMAN: I just want to illustrate this point on the map. At the present time freight comes here and the cost to the shippers is the money that is paid to Northern Transportation?

A. Yes.

THE CHAIRMAN: The cost of moving goods from Waterways to Uranium City involves two things: one is the freight paid by the Uranium City people to Northern Transportation?

A. Yes.

THE CHAIRMAN: Plus \$153,000 for dredging?

A. There may be other costs involved as regards capital equipment which is necessary in this operation and which may not be indicated in their annual report, and which may not be available to the company. This is, once again, an additional social cost, if we are speaking about a true cost of movement. Once again, the railway, we believe, would incur social costs in the same way, and we once again assumed that it would be a better idea to avoid whatever social costs will be possible. In other words, the maintenance of duplicate facilities both of which incur tremendous social costs, some of which are given, and others which are not shown. It would be in the interests of the Canadian people to avoid such costs resulting from the duplication of service in seeing that a rail line plus a barge movement would provide a more economic way of





supplying the service; that this, in essence, would be the way goods would move.

THE CHAIRMAN: You may be advancing a very strong argument against the railway going on this east route when you say you don't want a railroad to compete with barges. I am not sure you intended to advance that argument. To come back again to this question of costs: getting freight from Waterways to Uranium City -- and I am very anxious we get this clearly in our two minds -- getting freight from Waterways to Uranium City involves the money paid to Northern Transportation for carrying freight from Waterways to Uranium City?

A. Yes.

THE CHAIRMAN: And it also involves \$153,000 for dredging?

A. Yes.

THE CHAIRMAN: And now you have pointed out it includes social costs?

A. I just say there may be other costs.

THE CHAIRMAN: That is the freight rate from Waterways to Peace Point: we know that figure -- \$600,000 -- plus the water route winding through here to Uranium City, and we don't know what that is; and social costs. Let us take the social costs: do you think the social costs along the presently established route would exceed the social costs along the proposed route? It would involve building a lot of harbour facilities at Peace Point.





A. This is going to Uranium City, and this is really a cost - - I cannot speak about other costs. I am just indicating that this may be another factor which has to be considered, but in our operation we have considered the dredging costs which would be avoided by the operation from Peace Point.

THE CHAIRMAN: Yes, that is right, by carrying the freight from Waterways to Peace Point by rail, and then by water to Uranium City you can save \$153,000?

A. Yes.

THE CHAIRMAN: But by going by water, as you go now, you save the rail price of \$600,000?

A. I do not see that, sir, because the shipper in essence pays the \$1.3 million whether he receives it by rail-barge or just receives it by barge.

THE CHAIRMAN: Now, you are going to charge the shipper \$600,000, you told us, to take his freight from Waterways to Peace Point?

MR. BOYD: With respect, I point out that that would be our share of the revenue. The total cost to the shipper should be no greater than it now is.

THE CHAIRMAN: You say that would be your cost. Perhaps I misunderstood you.

MR. BOYD: No, our share of the revenue.

THE CHAIRMAN: Your share of the revenue?







MR. BOYD: Yes, our share of the total cost to the shipper - - the revenue. He pays \$1,300,000, and we would expect to obtain \$600,000 of that leaving \$700,000 for the water portion of the haul.

THE CHAIRMAN: Yes, it is your share. You are going to get \$600,000 to carry the freight from Waterways to Peace Point?

MR. BOYD: Yes, that is right, but it is not in addition to the \$1,300,000.

THE CHAIRMAN: I was not suggesting that. I was suggesting this: Mr. Rotstein has emphasized that by carrying the freight by rail to Peace Point and then by water you cut out \$150,000 in dredging costs - - that is perfectly clear, is it not?

MR. ROTSTEIN: You would avoid - - yes.

THE CHAIRMAN: But if freight is carried all the way by water the shippers avoid paying \$600,000 which you are going to charge them?

A. But they still pay the \$1,300,000.

THE CHAIRMAN: I have been trying to find out from you what it is going to cost going from Peace Point to Uranium City, and you have no idea of how much it is going to cost except that you subtract 6 from 13 and get 7.

A. Sir, the \$1,300,000 is the total cost to the shippers in the Athabasca area. If you add the rail-barge movement the cost to the shippers would not increase. It would still be \$1,300,000





for shipping - -

THE CHAIRMAN: Only if it is going to cost a lot less money to go by this route than to go by this route?

A. That is it, sir.

THE CHAIRMAN: Is not that so?

A. Yes, and we have said that the \$700,000 of revenue which would accrue to the barge movement is the cost to the shippers for that portion of the movement, and it would be adequate to operate a barge from Peace Point into the Athabasca.

THE CHAIRMAN: I would like to know why they think that \$700,000 would be adequate.

MR. BOYD: Earlier my Lord, you wondered whether we might resume tomorrow morning. The hour is late and maybe we are all getting a little impatient and tired. Perhaps we should resume in the morning.

THE CHAIRMAN: Yes, and in the morning we will be able to check these figures with Northern Transportation, I hope, and we will see if we can get a further witness. I would like to know something more, also, about the question of freight to Yellowknife, which you might consider. My colleague, Mr. Thompson, has just pointed this out, that he has taken furniture from Edmonton to Yellowknife, and he pays freight from Edmonton to Waterways of \$5.06. That is by rail. He then pays for the water route all the





way from Waterways to Yellowknife only \$1.75. That would appear to be a very much cheaper rate by water than by rail. Now, if there is going to be a corresponding charge over the railway - - perhaps the railway from Waterways to Peace Point is at least as far as from Edmonton to Waterways, is it not?

MR. BOYD: I am so confused now that I would hesitate to say Yes or No.

THE CHAIRMAN: I think it is a little further. Now, if the same rate is going to be charged over the new railway as that rate that my friend paid, he will be paying another \$5.06 to take his furniture from Waterways to Yellowknife instead of the \$1.75 he pays now, and he will still have to take it across the Great Slave Lake.

MR. BOYD: We will consider that over night.

THE CHAIRMAN: Yes, I am putting it to you now so that you may consider it. I would like to point out another rate now that I have given you that one which shows a great discrepancy. I think Mr. Horton talked about newsprint at Yellowknife, and I think he said there was just one or two cents difference between what he paid from Edmonton to Waterways and what he paid from Waterways to Yellowknife. I think it was \$1.73 and \$1.72 that he mentioned. But, he still took it all that distance by water for the same rate as he took it by rail to Waterways. Perhaps you would not mind considering those things.





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We will adjourn now until 10 o'clock to-  
morrow morning.

--- The hearing adjourned at 10.35 p.m.

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